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Canada

New Brunswick
AGRICULTURE
Nouveau-Brunswick

TECHNOLOGY ACCELERATION AND DEMONSTRATION PROJECTS

(JUNE 1984 TO SEPTEMBER 1986)

Agri-food
Agreement

Entente
Agro-alimentaire

1984-1989

Canada

New Brunswick
Nouveau-Brunswick

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TECHNOLOGY PROJECT REPORTS

JUNE 1984 - SEPTEMBER 1986

INFORMATION ON TECHNOLOGY ACCELERATION AND DEMONSTRATION PROJECTS UNDER THE 1984 - 1989 AGRI-FOOD AGREEMENT

A.F.A. Report: 1987 - 1

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Agriculture Canada

N.B. Department of Agriculture

INTRODUCTION

The $32-million Canada-New Brunswick Agri-Food Subsidiary Agreement (1984-1989) provides funding assistance for technology development, demonstration and adoption acceleration projects.

Technology Development: Pertains to short term research projects aimed at solving defined problems of livestock, livestock feed and horticulture/specialty crops production efficiency. Technology Development projects are not covered in this present report.

Technology Acceleration: Pertains to the application of proven technology to existing production in the areas of livestock, livestock feed, potatoes and horticulture/specialty crops.

Technology Demonstration: Pertains to trials, pilot projects, demonstrations, workshops, field days and investigative travel required to prove the effectiveness of existing technology in New Brunswick's livestock, livestock feed, potato and horticulture/specialty crops industries.

This report covers **Technology Acceleration and Technology Demonstration projects** undertaken under the Canada-New Brunswick Agri-Food Agreement since its inception in June 1984 and includes those realized up until the end of September, 1986.

All acceleration and demonstration projects are not included but those that are give a good overview of the types of activities undertaken to date.

The AFA Technology Advisory Committee wishes to acknowledge the contribution of all those involved in the projects mentionned herein and in the preparation of the individual project reports. Information on these projects was compiled by Miss Marlene Green, a university student.

P. Jones	J.W.G. Nicholson
N.B. Agriculture	Agriculture Canada
Provincial Co-Chairman	Federal Co-Chairman

AFA TECHNOLOGY ADVISORY COMMITTEE

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TECHNOLOGY PROJECT REPORT

PROJECT TITLE: By-Product Feeding of Hogs (under T002)

PROJECT AFA NUMBER: T014

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Marlene Moffett Ltd.
Penobsquis, N.B.
Phone: 433-4692

PROJECT COLLABORATOR: M. Snodden
N.B. Department of Agriculture
Phone: 453-2457

DATE APPROVED: February, 1985

AGREEMENT FUNDING: $ 7,500.

TOTAL PROJECT COST: $25,000.

PROJECT OBJECTIVE:

1. reduce feed wastage
2. reduce labour requirements
3. substitute whey for purchased grains
4. provide limit feeding and house better carcass quality, thereby making the operation more competitive.

A 600 pig feeder barn will be converted from a dry feeding system to a liquid slurry system to feed a by-product (whey) from another commodity sector therefore reducing the requirement for imported feed grain.

(cont'd T014)

SUMMARY: The Big Dutchman was installed in February, 1985. It has the capability to mix feed and whey (or water or any by-product such as potato waste, high moisture grain, etc.) in a vat. The vat is on scales and the mix is computer controlled.

The resulting slurry is pumped to the individual troughs throughout the barn via a PBS pipeline. The amount delivered to each trough is computer controlled and accurate. The liquid feeding reduces feed waste and improves feed conversion. As well, the use of whey reduces the amount of purchased grain.

The health benefit of the whey as well as as the fact all pigs eat at once will improve the overall health status of the herd, reducing losses and further improving feed conversion.

Two batches of the feed are mixed automatically, by a computerized time clock, in the night and in the morning, allowing all the pigs to be fed automatically four times per day. This feed is only fed to the growing - finishing pigs at this time but later the other pigs will also be fed a special type of feed suited for their needs.

The Moffetts are pleased with this system and find that the pigs are healthier, it has cut down on the dust in the barn from the previous dry feed, thereby reducing the breathing problems and also there are less stomach infections. There is an expected payback of less than two years.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Liquid Feed System (Hogs) (under T002)

PROJECT AFA NUMBER: T049

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: D. R. Weston & Son Ltd.
Centreville, N.B.
Phone: 276-3678

PROJECT COLLABORATOR: Murray Snoddon
N.B. Department of Agriculture
Phone: 453-2457

DATE APPROVED: February, 1985

AGREEMENT FUNDING: $ 6,300.

TOTAL PROJECT COST: $21,000.

PROJECT OBJECTIVE: To develop a liquid feed system for hogs to feed mainly steamed peel potatoes and replace some of the dry grain ration.

SUMMARY: Mr. Weston presently has about 450-500 feeder pigs that he feeds a portion of the hog ration mixed with steamed peel potatoes which McCain Foods are presently dumping.

His mixing tank is an old milk tank that has been revised to mix the feed in, the mixing paddle is an old combine swather. This is a Lohmann System made in Germany. At this time the system is run manually and Mr. Weston needs an electric pump before the system can mix the feed automatically.

(cont'd T049)

The peel is pumped into the mixing tank by a gas pump. Mr. Weston uses about 20% steam peel, the rest being water that is needed to dilute the peel and hog ration. He judges the amount of feed by watching the thickness of the feed. He usually mixes up about 2200 lbs. of feed for each feeding at 7:00 a.m. and 5:00 p.m. The feed is then pumped into the feeder barn by another gas motor.

Healthwise, the pigs are doing just as well but growth-wise, it takes about two weeks longer to finish off the hogs. The pigs are a lot dirtier and it takes about the same amount of time as usual to feed the hogs. This feed is a lot cheaper and therefore, even though the growing period is longer, it is a more economical type of feed.

Mr. Weston is pleased with this system and has had no difficulties in feeding the steam potato peel.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Liquid Feed (under T002)

PROJECT AFA NUMBER: T095

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Aimé St-Onge
R. R. # 3
Edmundston, N.B.
Phone: 739-5882

PROJECT COLLABORATOR: J. Duval
N.B. Department of Agriculture
Phone: 739-9545

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $10,000.

TOTAL PROJECT COST: $40,000.

PROJECT OBJECTIVE: Installation of a liquid feed system for a hog feeder barn

SUMMARY: Aimé St-Onge uses the Big Dutchman in combination with the Farmatic mixer to feed steam peel in his feeder barn. He installed this system between December and January, 1986.

The pigs are divided into three different sections of the barn and are fed three different rations, three times daily.

(cont'd T095)

The first section is fed a starter ration which is 18% protein. The pigs in this section are freshly weaned and weigh about 36 lbs. They stay here until they weigh about 55 lbs. and then are transferred to the second section. In this section they are fed a 16% protein ration until they reach 110 lbs. The final section contains pigs that weigh 110 - 220 lbs. These are fed a 14% protein ration. The sections are fed at three different times during the day. The system is completely automatic and operates with the aid of a computer which contains information about all of the pigs in the barn. Currently Mr. St-Onge has a total of 1,163 pigs in his feeder barn.

This system uses about 20% steamed peel in the pig's diet, along with weighed out proportions of water, soybean, corn, barley and pre-mix ration.

The pigs grow more rapidly with this system and it is a cheaper method of feeding due to the steamed peel that is used. Current cost for steamed peel is about $10.00 per ton. Mr. St-Onge is pleased with this system and had no real problems.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Computerized Feeding System for a Free-Stall Barn (under T011)
PROJECT AFA NUMBER:	T043
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Pieter Wolters R. R. # 3 Mouth of Keswick, N.B. Phone: 363-2143
PROJECT COLLABORATOR:	D. Taylor N.B. Department of Agriculture Phone: 453-2272
DATE APPROVED:	March, 1985
AGREEMENT FUNDING:	$ 3,600.
TOTAL PROJECT COST:	$18,000.
PROJECT OBJECTIVE:	To purchase and install a computerized feeding system.

SUMMARY: Pieter Wolters uses the Alfa-Laval, Ration Master II Feeder. He is pleased with the system and has had no problems with it.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Installation and Utilization of a Functional-Computerized Feeding and Management System (under T011)
PROJECT AFA NUMBER:	T069
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Stephen L. DeMerchant R. R. # 2 Arthurette, N.B. Phone: 356-2222
PROJECT COLLABORATOR:	C. Brennan N.B. Department of Agriculture Phone: 392-6007
DATE APPROVED:	April, 1985
AGREEMENT FUNDING:	$ 4,800.
TOTAL PROJECT COST:	$24,935.

PROJECT OBJECTIVE:

1. To establish and utilize a functional feed management system which can focus on the nutritional requirements of individual dairy cows and heifers.
2. To improve the overall feed and feeding management system of the operation, particularly as it relates to the rate of pounds of milk per pound of grain mix.
3. To alleviate the current dust problems which exist in the milking parlor.

(cont'd T069)

4. To decrease the time applied to actual milking and apply the additional time to other management requirements.

5. To utilize a functional system of production records, historical data, etc. on individual productive units and the herd in general.

6. To establish a system which will be more compatible to the utilization of the hired help, particularly during those periods when management must be utilized in forage and grain planting and harvesting.

SUMMARY: Mr. DeMerchant used the Surge Infarmation Computerized Feeding System to feed about 68 dairy cows in a free-stall barn. This system feeds the cows according to their individual lactation curve, adjusting the ration automatically daily, for each cow. Each cow has its own tag and number. Complete information about each cow is listed on the computer.

Mr. DeMerchant has two feeding stalls located in the feeding area of the barn. A sensor in the feeding stall detects which cow it is and automatically regulates the amount of feed that cow requires. The feed drops for about three seconds, every 20 seconds, thus making sure that the cow is not eating too quickly. For other cows that eat too slow, the machine can be regulated so that the feed drops faster causing the cow to eat more. If a cow stands in a stall trying to get more feed than what she is allowed the machine automatically shuts off and she cannot get more feed until her next scheduled feeding. Each cow can be fed up to a maximum of eight feedings daily.

This system saves time in feeding the cows, they can be fed automatically without anyone present and the dust problem in the milking parlor has been eliminated. It has also decreased the amount of feed being used, and it has increased production.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Computer Feeding System (under T011)

PROJECT AFA NUMBER: T112

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Marinus Degroot
Eel River Crossing, N.B.
Phone: 826-2305

PROJECT COLLABORATOR:
I. Breau
N.B. Department of Agriculture
Phone: 684-4253

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $ 4,800.

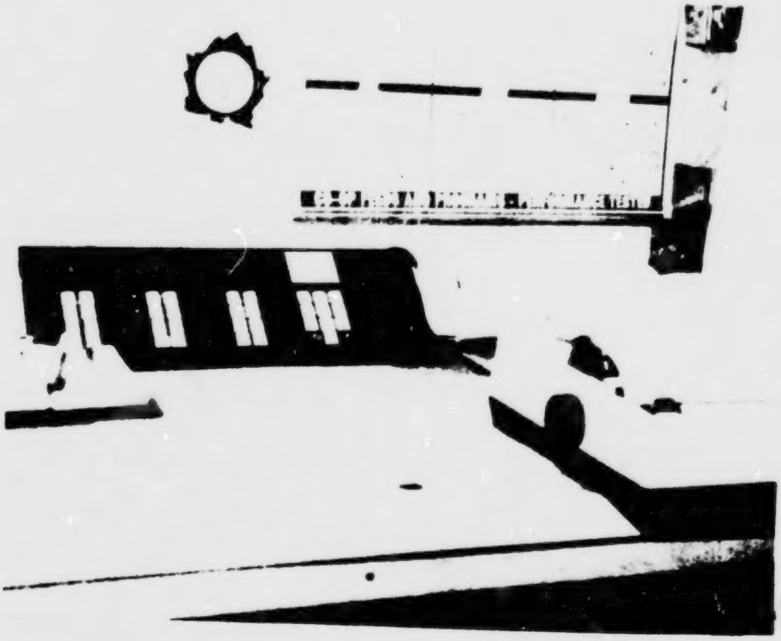
TOTAL PROJECT COST: $32,163.

PROJECT OBJECTIVE: To install and use a Surge Computerized Feeding System.

SUMMARY: Marinus Degroot installed the Surge Infarmation Computer System in August, 1985. He feels that it has improved his milk production. He has had no problems with it and is pleased with the way it works.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: I.C.F. Feeding System (under T011)



PROJECT AFA NUMBER: T137

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
George J. & Ronald G. Trueman
Prospect Farm
R. R. # 3
Sackville, N. B.
Phone: 536-1407 or 536-1679

(cont'd T137)

PROJECT COLLABORATOR: A. Saunders
N.B. Department of Agriculture
Phone: 858-2552

DATE APPROVED: May, 1985

AGREEMENT FUNDING: $ 4,800.

TOTAL PROJECT COST: $27,543.

PROJECT OBJECTIVE: The object is to purchase a computer programmed for herd management, and to install computerized feeders and responders, to get maximum yield from cows.

SUMMARY: Mr. Trueman purchased the Individual Cow Feeding System from Universal. He has about 250 Ayrshire cattle and milks an average of about 100 cows in a free stall barn. He feeds one type of feed with the system six times daily and has found a 16% reduction in feed cost. One benefit is the elimination of feed waste. The I.C.F. operates similar to the Surge automatic feeding system.

The cows are identified by a metal tag on a neck strap which activates a sensor in the feeder stall to meter the correct amount of feed for each particular cow. The amount of feed each cow receives is calculated by the computer based on milk production and other information entered by the operator.

There are five feeding stalls in the system that are placed side by side in one end of the barn. There is very little crowding and with this method, Mr. Trueman feels that his cows are a lot quieter. He is pleased with the results of this feeding system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Dairy Cattle Computer Feeding System (under T011)

PROJECT AFA NUMBER: T230

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:

Fred Waddy
Waddy & Colpits Ltd.
R. R. # 1
Salisbury, N.B.
Phone: 372-4429

(cont'd T230)

PROJECT COLLABORATOR: D. Balzer & A. Saunders
N.B. Department of Agriculture
Phone: 858-2552

DATE APPROVED: October, 1985

AGREEMENT FUNDING: $ 4,800.

TOTAL PROJECT COST: $25,000.

PROJECT OBJECTIVE: To install and use a dairy cattle computer feeding system.

SUMMARY: Fred Waddy uses the Bou-matic computer feeding system, BM 1500. He has three feeding stalls side by side in his free stall barn. Each stall can handle about 25 cows. He feeds the cows two times daily in the summer while they are out on the pasture and four times daily in the winter with an 18% commercial dairy ration. He has saved about $5,000 in feed since installing the system and feels that his butterfat test has increased. The cows receive an additional 10 lbs. of ration in the parlor during milking.

The only problem with this system is that some cows do not take to the system as rapidly as others. It may take a few days for the cows to eat from the feeder. Mr. Waddy is pleased with this system and has had no real problems with it.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Computerized Feeders - Free Stall (under T011)

PROJECT AFA NUMBER: T252

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Hubert Duivenvoorden
Jacquet River, N.B.
Phone: 237-5445

PROJECT COLLABORATOR: I. Breau
N.B. Department of Agriculture
Phone: 684-4253

DATE APPROVED: January, 1986

AGREEMENT FUNDING: $ 2,580.

TOTAL PROJECT COST: $12,899.

PROJECT OBJECTIVE: To install and use a computerized Universal I.C.F. System

SUMMARY: Hubert Duivenvoorden uses the Universal computerized feeding system to feed his dairy cattle. He has had no problems with this system and finds it helpful in his operation.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Computer Grain Feeder for a Free Stall (under T011-1)
PROJECT AFA NUMBER:	T301
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Bernard Clain R. R. # 2 Anagance, N.B. Phone: 756-3947
PROJECT COLLABORATOR:	M. Snoddon & D. Taylor N.B. Department of Agriculture Phone: 453-2457 or 453-2272
DATE APPROVED:	April, 1985
AGREEMENT FUNDING:	$ 2,800.
TOTAL PROJECT COST:	$14,000.
PROJECT OBJECTIVE:	To purchase an automatic grain feeder.

SUMMARY: Mr. Clain purchased and installed the automatic, computerized Bou-Matic feeding system in his free-stall barn. He is pleased with the way it operates and recommends it to others.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Automatic Forage Feeding System
(under T015)

PROJECT AFA NUMBER: T018

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Roy W. McCullum
R. R. # 1
Sussex, N.B.
Phone: 433-2697

PROJECT COLLABORATOR: E. A. Eagles
N.B. Department of Agriculture
Phone: 433-3073

DATE APPROVED: February, 1985

AGREEMENT FUNDING: $ 925.

TOTAL PROJECT COST: $3,700.

PROJECT OBJECTIVE: To purchase a forage feed cart.

SUMMARY: Roy McCullum purchased a WIC feed cart in February, 1985. The cart works well and he is pleased with it. Mr. McCullum recommends the forage feed cart to other farmers.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Mechanical Forage Feeding System (under T015)
PROJECT AFA NUMBER:	T021
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Grant P. Floyd Kings Co. Sussex, N.B. Phone: 433-3332
PROJECT COLLABORATOR:	E. A. Eagles N.B. Department of Agriculture Phone: 433-3073
DATE APPROVED:	February, 1985
AGREEMENT FUNDING:	$ 1,000.
TOTAL PROJECT COST:	$18,000.
PROJECT OBJECTIVE:	To install a forage feeding system.

SUMMARY: Grant Floyd installed the Northumberland Silo which was a package deal that included the silo unloader, elevator, conveyor, and bunk feeder. He feeds the silage as a free-choice type of feed to his dairy herd. The system works well, he has had only minor adjustments made to the machinery and recommends it to other farmers as a labour saving device for feeding silage.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Forage Cart (under T015)

PROJECT AFA NUMBER: T039

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Armand Lévesque
R. R. # 1
Campbellton, N.B.
Phone: 259-9660

PROJECT COLLABORATOR:
I. Breau
N.B. Department of Agriculture
Phone: 684-4253

DATE APPROVED: February, 1985

AGREEMENT FUNDING: $ 750.

TOTAL PROJECT COST: $3,000.

PROJECT OBJECTIVE: To install and use a forage feeding cart.

SUMMARY: Armand Lévesque purchased the Nitrionic forage feed cart in 1985. This unit is operated by four 12 volt batteries. He is pleased with the way it works and recommends it to other farmers.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Mechanized Forage Feeding System
(under T015)

PROJECT AFA NUMBER: T104

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Bernard Clain
R. R. # 2
Anagance, N.B.
Phone: 756-3947

PROJECT COLLABORATOR: W. Brown
N.B. Department of Agriculture
Phone: 433-3073

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $1,000.

TOTAL PROJECT COST: $8,500.

PROJECT OBJECTIVE: To purchase and install a forage feeding system.

SUMMARY: Mr. Clain purchased a forage feeding system from Trites Equipment in Salisbury. The system includes a silo, a Supreme unloader, and a Patz belt conveyor. He is pleased with the system and recommends it to other farmers.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: A Motorized Feeding Cart for Feeding Silage to Cattle

PROJECT AFA NUMBER: T119

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Yvon Banville
R. R. # 3
St-Quentin, N.B.
Phone: 235-2230

PROJECT COLLABORATOR:
P. Ouellet
N.B. Department of Agriculture
Phone: 235-2683

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $ 950.

TOTAL PROJECT COST: $3,800.

PROJECT OBJECTIVE: To purchase and use a 5 H.P. gas operated PROVIBEC forage feeding cart.

SUMMARY: Yvon Banville purchased the PROVIBEC forage feed cart in 1985. He is pleased with the way it works and finds it to be an easier method of feeding silage to his cattle. The unit has a capacity of 400 lbs. of silage.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Mechanized Forage Feeding System
(under T015)

PROJECT AFA NUMBER: T130

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Fairmuir Farms Ltd.
R. R. # 2
Rexton, N.B.
Phone: 523-6532

PROJECT COLLABORATOR: C. Goguen
N.B. Department of Agriculture
Phone: 523-9796

DATE APPROVED: May, 1985

AGREEMENT FUNDING: $1,000.

TOTAL PROJECT COST: $4,000.

PROJECT OBJECTIVE: To puchase a forage feed car.

SUMMARY: Fairmuir Farms purchased a Northumberland Silo Car in March, 1986. He has used the Silo Cart for a couple of months and is well pleased with the way it works, and has had no problems with it.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Mechanized Forage Feeding System
(under T015)

PROJECT AFA NUMBER: T141

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Lionel J. Nadeau
St-François, N.B.
Phone: 992-2228

PROJECT COLLABORATOR: H. Cyr
N.B. Department of Agriculture
Phone: 739-9545

DATE APPROVED: May, 1985

AGREEMENT FUNDING: $1,000.

TOTAL PROJECT COST: $4,500.

PROJECT OBJECTIVE: To purchase and install a forage feeding cart.

SUMMARY: Lionel Nadeau used the WIC 70 forage feeding system for a nine-month period. The machine can be driven throughout the barn and empties silage into the stalls with a conveyor system. The conveyor can be reversed so that it can feed both sides of the barn at once in head to head arrangements. The forage cart is operated by a 7 H.P. gas engine. Mr. Nadeau has had no problems with this forage cart but finds that it is too costly to maintain. He has another method of feeding silage which he is going to try and if this method proves to be more effective and cheaper, then he is going to consider selling the forage feed cart.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Mechanized Forage Feeding System For Dairy Herds (under T015)
PROJECT AFA NUMBER:	T158
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Harry M. Dykstra R. R. # 4 Grand Falls, N.B. Phone: 473-5133
PROJECT COLLABORATOR:	B. R. Cyr N.B. Department of Agriculture Phone: 473-5515
DATE APPROVED:	June, 1985
AGREEMENT FUNDING:	$1,000.
TOTAL PROJECT COST:	$4,500.
PROJECT OBJECTIVE:	To make the most efficient use of manpower to feed dairy cattle.

SUMMARY: Mr. Dykstra used the Surge Infarmation computer feeding system to feed his cows on the lactating curve system. A password chosen by the operator must be keyed into the system to view the information that is stored in the computer. This prevents anyone from fooling around with the records. This system can be used with beef cattle as well as dairy.

(cont'd T158)

It takes only a couple of minutes to check the reports on his cows and all information is updated daily. Mr. Dykstra reads the feeding schedule every three days because he feels that there is very little difference in the amount of feed ration for each cow within three days. He feeds the cows by hand using a bucket with different levels of feed marked on the inside of the bucket as a measure. The cows are fed twice daily in the summer and four times daily in the winter. He uses two different types of feed, an A and a B type. The A type is a feed given to all the cows that are milking, and the B type is given as an additional feed to the top dressing cows. With this system, milk production increased. Since Mr. Dykstra did not want to buy more milk quota at this time, he reduced the amount of feed given to each cow to reduce some of his milk production level. He did not want to sell some of his cows because there was no demand for fresh cows on the market.

This system has greatly improved his breeding system. Most of his cows are bred by artificial insemination, so Mr. Dykstra only has to check the computer to see which cows are in heat. Also, this method makes it easier to check his cows for pregnancy because the computer gives him a list of all cows which are expected to be bred and then the Vet can check these.

Mr. Dykstra feels that the Surge system gives him a better service than the RP program that he was using previously. He is impressed with the difference this system has made and feels that anyone with 50 cows or more should consider this type of system for their production methods. Mr. Dykstra would like to use the automated feeding system along with his computer system but he plans to build a new barn in the future and then install the automatic feeding system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Greensprouting of Early Potatoes

PROJECT AFA NUMBER: T090

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Eugene R. Lang
C. P. 73
Clair, N.B.
E0L 1B0
Phone: 992-2340

PROJECT COLLABORATOR: G. Pelletier
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $ 247.50

TOTAL PROJECT COST: $ 825.00

PROJECT OBJECTIVE: To greensprout part of the early potato crop.

SUMMARY: Mr. Lang followed the usual procedures for greensprouting early potatoes, but he did not use the grow-lights. Instead he set the potatoes in an area so that they greensprouted with the aid of natural sunlight. He planted Keswick and Superior potatoes. He plans to continue with this method of growing early potatoes.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Pre-germination (under T029)
PROJECT AFA NUMBER:	T093
PROGRAM:	Potato Industry Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Ronald Lévesque R. R. # 6, Chemin Lévesque Grand Falls , N.B. Phone: 473-2118
PROJECT COLLABORATOR:	G. Pelletier N.B. Department of Agriculture Phone: 473-5515
DATE APPROVED:	April, 1985
AGREEMENT FUNDING:	$ 1,000.
TOTAL PROJECT COST:	$ 4,155.
PROJECT OBJECTIVE:	To introduce greensprouting as a method of growing early potatoes.

SUMMARY: Greensprouting means providing both warmth and light to tubers for several weeks in the spring.

Mr. Lévesque began greensprouting Jemseg potatoes around the first week of April. He spread the potatoes out on board platforms in the garage, one layer thick. He kept the temperature in this area at about 70° F. He put grow-lights in between the potatoes and added water from time to time. He planted these potatoes by hand around the second week of May. He sold them around the end of August, in grocery stores from Grand Falls to Edmundston in 5 lb. and 10 lb. bags, when the

(cont'd T093)

potatoes were still being sold at a high price. Mr. Lévesque was pleased with results and plans to grow early potatoes by this method in the future. The only problem with this method is that it is very time consuming.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Greensprouting of Seed (under T029)

PROJECT AFA NUMBER: T097

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Fernand Roberge
R. R. # 1
Ste. Anne, N.B.
Phone: 445-2564

PROJECT COLLABORATOR:
G. Pelletier
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $ 123.70

TOTAL PROJECT COST: $ 412.00

PROJECT OBJECTIVE: To greensprout a portion of his early potatoes.

SUMMARY: Fernand Roberge greensprouted about one-half an acre of Superior potatoes following the general recommendations of the Department, except he used natural light rather than artificial. Mr. Roberge likes this method and plans to continue greensprouting a portion of his seed each year.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Greensprouting of Early Potatoes

PROJECT AFA NUMBER: T103

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Gilles-Pierre Côté
R. R. # 5
Grand Falls, N.B.
Phone: 473-4596

PROJECT COLLABORATOR: G. Pelletier
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $ 1,000.

TOTAL PROJECT COST: $ 4,125.

PROJECT OBJECTIVE: For the 1985 growing season, the objective is to encourage a potato producer, that supplies the early fresh markets, to greensprout a part of his acreage in order to supply these markets even earlier when prices are higher.

SUMMARY: Mr. Côté planted ten acres of greensprouted Desiree potatoes. He planted four acres of whole greensprouted seed and six acres of cut greensprouted seed. He used 850 crates to greensprout the potatoes, one layer thick in each crate, stacking them about nine feet high in a storage area that was heated to 65° - 70° F. for the first two weeks. He began greensprouting in

(cont'd T103)

April, rotating the potatoes once in six weeks and used 4 grow-lights placed between the crates as a light source. He planted the potatoes by hand in June and harvested them the first of October.

Mr. Côté greensprouted the potatoes because it is a method used in Europe to lessen the disease and to produce a higher yield of potatoes, not to produce an early potato. The next time he tries greensprouting he is going to make a few changes in his procedures. He is going to try using a pale orange-red light on part of his potatoes and the grow-light on the other part of his potatoes. Also, he is going to rotate his potatoes more often for a more even greensprouting throughout the period. He is pleased with the results and hopes to improve his potato yield even more next time.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Greensprouting of Early Potatoes

PROJECT AFA NUMBER: T132

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Pierre Bourgeois
R. R. # 1, Boite 32A
Grand-Digue, N.B.
Phone: 576-7736

PROJECT COLLABORATOR: C. LeBlanc
N.B. Department of Agriculture
Phone: 858-2552

DATE APPROVED: May, 1985

AGREEMENT FUNDING: $ 781.80

TOTAL PROJECT COST: $2,606.00

PROJECT OBJECTIVE: To introduce the method of greensprouting of early potatoes.

SUMMARY: Pierre Bourgeois used the greensprouting method to grow early potatoes using Jemseg and Superior potatoes for seed. He is undecided whether he will continue with this method next year. He has sold the potatoes at the local market.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Greensprouting of Early Potatoes (under T029)
PROJECT AFA NUMBER:	T144
PROGRAM:	Potato Industry Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Byron McGrath Centreville, N.B. Phone: 276-4691
PROJECT COLLABORATOR:	Ghislain Pelletier N.B. Depatment of Agriculture Phone: 473-5515
DATE APPROVED:	May, 1985
AGREEMENT FUNDING:	$ 900.
TOTAL PROJECT COST:	$3,000.
PROJECT OBJECTIVE:	For the 1985 growing season, encourage a potato producer from the Northwest who supplies early fresh markets to greensprout a part of his acreage in order to supply these markets even earlier when prices are higher.

SUMMARY: Greensprouting seed potatoes is a standard practice in the Netherlands. Greensprouting means providing both warmth and light to tubers for several weeks in the spring. These conditions result in the formation of multiple short, firm, greensprouts that will give smooth regular emergence, early tuberization and a plant with moderate foliage development giving a good early crop.

(cont'd T144)

Mr. McGrath plants about four acres of greensprout potatoes, using Jemseg potatoes because it is the best type of potato for this test. Twenty-five pounds of potatoes are placed one layer thick in each chitting tray. These trays are square, similar to blueberry trays. There are legs on the bottom of each tray so that they can be stacked one on top of the other to the ceiling. He uses a greenhouse to store enough for two acres but must find room elsewhere for two more acres of potato seed. He uses a special light similar to the fluorescent light, known as a grow-light which is more like real sunlight. These grow-lights are put between the trays and used during the whole period of greensprouting. The temperature of the potatoes must be kept at 70° F. for the first two weeks. Plastic is put around the trays to help regulate this temperature.

Mr. McGrath starts to greensprout in March. It takes 5 - 7 weeks to greensprout properly. During this period, the trays are rotated three different times to allow for even sprouting.

He has planted the potatoes by three different methods: by hand, by using a tubular unit planter and by using a regular potato planter. He eliminated the method of planting by hand because it was too time consuming. He used the tubular unit planter and the regular planter and found that there was no significant difference in the potatoes. Also, the regular planter could plant the same amount of potatoes in an hour that the tubular planter planted all day long. The only problem with the regular potato planter was that it could only be filled one-third as full as the normal amount, otherwise, the greensprouts would be knocked off thus defeating the purpose of greensprouting.

Mr. McGrath planted greensprout Jemseg potatoes next to regular Superior seed on the same day so that he could compare the potatoes. At this point, the Jemseg potato is about two weeks ahead of the Superiors in growth. The Jemsegs are already blossomed with little potatoes under them. They will be ready to harvest during the third week of July. This process is still in the experimental stages but Mr. McGrath is pleased with his results and plans to continue planting some of his early potatoes by this method.

TECHNOLOGY PROJECT REPORT

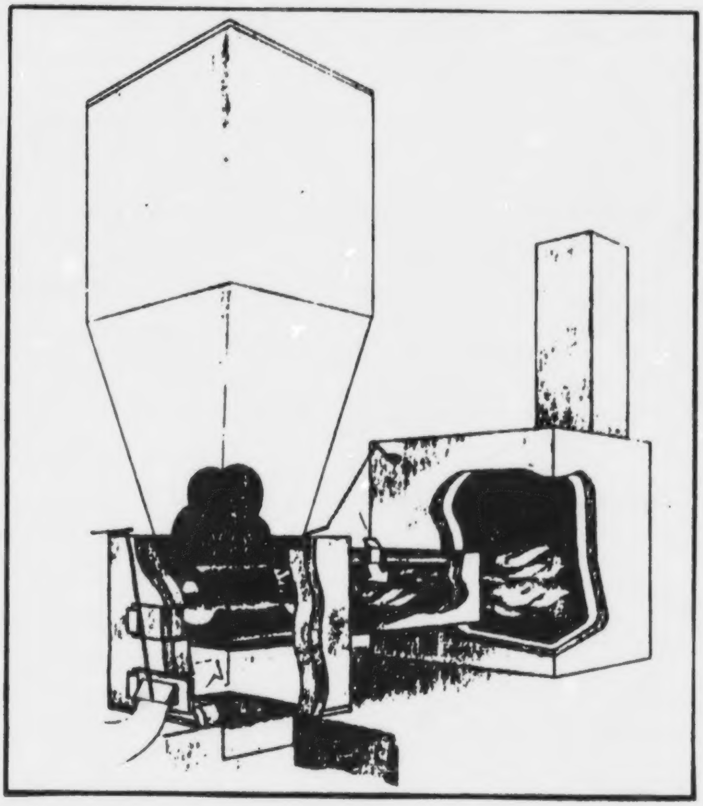
PROJECT TITLE:	Wood Heat in Poultry Houses (under T051)
PROJECT AFA NUMBER:	T105
PROGRAM:	Livestock Industry Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Slipp Farms Ltd. c/o George W. Slipp R. R. # 1 Hampstead, N.B. Phone: 425-2699
PROJECT COLLABORATOR:	D. Ramey N.B. Department of Agriculture Phone: 453-2517
DATE APPROVED:	April, 1985
AGREEMENT FUNDING:	$ 5,000.
TOTAL PROJECT COST:	$22,500.
PROJECT OBJECTIVE:	To convert five poultry barns to wood heat; two are presently heated with electricity and three with oil.

SUMMARY: The purpose of this project is to install three W.F. Woodfired furnaces in five poultry barns.

Heating costs are a major expense for this broiler operation as the flocks going into the barns during winter months require large amounts of supplemental heat. The conversion to wood heat has possibilities of saving energy cost to any producer who is presently heating buildings with electricity or oil. This method of heating has proven to be very efficient and cost effective. The savings for the first year of operation has paid for the conversion costs.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Wood Heating System for Poultry Buildings (under T051)



PROJECT AFA NUMBER: T188

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Murray W. MacDonald
R. R. # 2
Cody's, N.B.
Phone: 362-2929

PROJECT COLLABORATOR:
D. Ramey
N.B. Department of Agriculture
Phone: 453-2517

(cont'd T188)

DATE APPROVED:	August, 1985
AGREEMENT FUNDING:	$ 5,000.
TOTAL PROJECT COST:	$44,000.
PROJECT OBJECTIVE:	To install a Laka Wood Heating Furnace.

SUMMARY: This unit was installed late in the heating season and there was no report available as of September, 1986. There were a few problems; however, once these are worked out, it is expected to work well and should have a 3 - 4 year pay back.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Energy Efficient Fans

PROJECT AFA NUMBER: T250

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Bertin Cyr
St. François, N.B.
Phone: 992-3246

PROJECT COLLABORATOR: L. Arsenault
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: December, 1985

AGREEMENT FUNDING: $ 1,074.

TOTAL PROJECT COST: $ 4,295.

PROJECT OBJECTIVE: To purchase and install 12 energy efficient fans for a turkey operation.

SUMMARY: Between April and May of 1986, Mr. Cyr installed two International Fans, known as the "Gold Fans" in the third level of each of his four turkey barns. These fans supply a large air capacity at a very low energy consumption. It has a steep curve so that varying wind pressure does not influence the air capacity. The units installed are five-speed fans controlled with transformers and electronic regulating equipment. These fans move more air than conventional units of the same size. Mr. Cyr is pleased with these fans and has had no problems with them.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Speedling System
PROJECT AFA NUMBER:	T170
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Accelertion
PROJECT ORIGINATOR:	La Coopérative Agricole de Rogersville Ltée C. P. 190 Rogersville, N.B. Phone: 775-6687
PROJECT COLLABORATOR:	C. Goguen N.B. Department of Agriculture Phone: 523-9796
DATE APPROVED:	July, 1985
AGREEMENT FUNDING:	$ 1,000.
TOTAL PROJECT COST:	$ 6,200.
PROJECT OBJECTIVE:	To purchase speedling trays.

SUMMARY: The Co-op purchased 300, plastomer, speedling trays to start broccoli, cauliflower, cabbage and brussel sprouts in the greenhouse the first of April. These plants are being harvested and sold on the fresh market starting at the end of July.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Speedling Systems (under T058)
PROJECT AFA NUMBER:	T171
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Roger Richard E. E. # 4 Rogersville, N.B. Phone: 775-2232
PROJECT COLLABORATOR:	C. Goguen N.B. Department of Agriculture Phone: 523-9796
DATE APPROVED:	July, 1985
AGREEMENT FUNDING:	$ 1,000.
TOTAL PROJECT COST:	$ 4,200.
PROJECT OBJECTIVE:	To purchase speedling trays to start bedding plants.

SUMMARY: Roger Richard has bought 400 speedling trays to be used to start cabbage, broccoli, brussel sprouts and cauliflower, enough to grow about 10 - 11 acres of these plants.

He feels that with this method he produces a better more durable plant and saves on peat moss. He recommends using the trays to grow these crops.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Speedling Systems (under T058)
PROJECT AFA NUMBER:	T172
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Nazaire Arsenault Rogersville, N.B. Phone: 777-2350
PROJECT COLLABORATOR:	C. Goguen N.B. Department of Agriculture Phone: 523-9796
DATE APPROVED:	July, 1985
AGREEMENT FUNDING:	$ 423.
TOTAL PROJECT COST:	$1,410.
PROJECT OBJECTIVE:	To purchase speedling trays to start bedding plants.

SUMMARY: Nazaire Arsenault purchased 250 trays to start brussel sprouts. He has been growing brussel sprouts for about ten years and is satisfied with these new trays. He recommends them to start plants in.

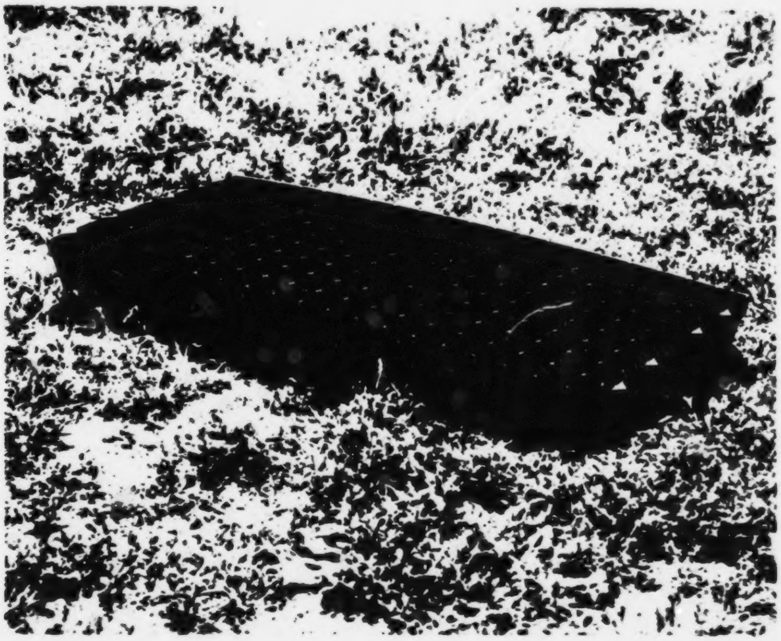
TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Speedling Systems (under T058)
PROJECT AFA NUMBER:	T174
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Roger Caissie Rogersville, N.B. Phone: 775-6584
PROJECT COLLABORATOR:	C. Goguen N.B. Department of Agriculture Phone: 523-9796
DATE APPROVED:	July, 1985
AGREEMENT FUNDING:	$ 1,000.
TOTAL PROJECT COST:	$ 5,400.
PROJECT OBJECTIVE:	To purchase speedling trays to start bedding plants.

SUMMARY: Roger Caissie bought the trays this year.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Speedling System (under T058)



PROJECT AFA NUMBER: T235

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Charles Robichaud
Robichaud, N.B.
Phone: 577-6040

(cont'd T235)

PROJECT COLLABORATOR: C. Leblanc
N.B. Department of Agriculture
Phone: 858-2552

DATE APPROVED: November, 1985

AGREEMENT FUNDING: $ 120.

TOTAL PROJECT COST: $ 400.

PROJECT OBJECTIVE: The objective of this project is to purchase better equipment to improve bedding plants.

SUMMARY: The speedling system consists of about 50 seeding trays that were purchased to begin bedding plants. The trays are made of durable, hard plastic that will last indefinitely. Each tray will hold 200 plants that provide accurate spacing. The trays are filled with a wet pro-mix soil. The seeds were planted by hand in April and transplanted May 15. There was trouble in taking the plants out of the trays, possibly due to the soil being put in wet and packed too tightly. It is possible to plant 10 - 15 trays per hour. The system was used for cauliflower, broccoli and cabbage. The plants were transplanted in the field by an ordinary transplanting machine.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Improved Feed Efficiency (under T129)

PROJECT AFA NUMBER: T133

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Darryll C. Jonah
R. R. # 2
Sussex, N.B.
Phone: 433-5415

PROJECT COLLABORATOR: E. A. Eagles
N.B. Department of Agriculture
Phone: 433-3073

DATE APPROVED: May, 1985

AGREEMENT FUNDING: $ 1,539.

TOTAL PROJECT COST: $ 7,695.

PROJECT OBJECTIVE: To purchase an automatic feed car.

SUMMARY: Mr. Jonah purchased an Alfa-Laval Feed car in May, 1985. He is pleased with the way it works; he has had minor problems with the circuit system which have been resolved.

TECHNOLOGY PROJECT REPORT

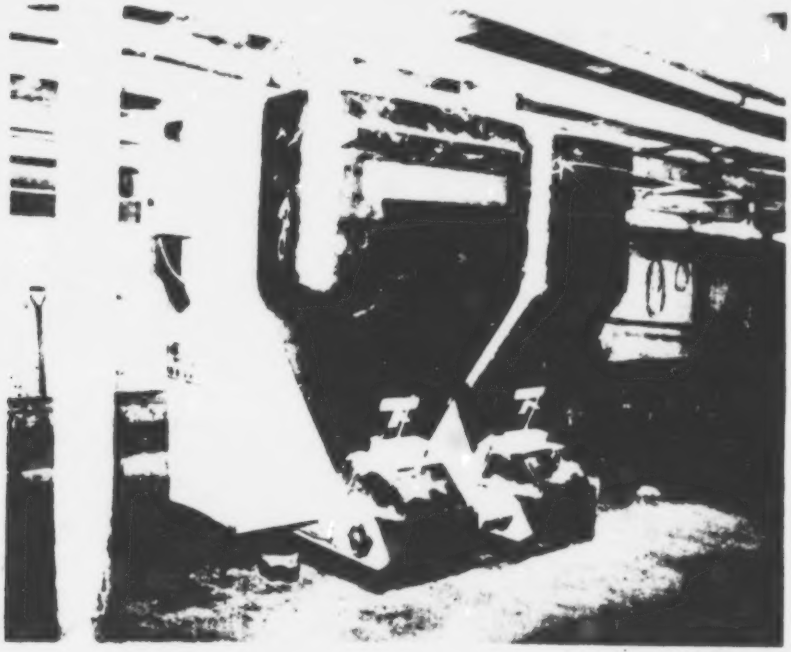
PROJECT TITLE:	Alfa-Laval Feed Car (under T129)
PROJECT AFA NUMBER:	T156
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Donald E. Howe Boreview Farms Ltd. R. R. # 3 Moncton, N.B. Phone: 386-6822
PROJECT COLLABORATOR:	D. Balzer N.B. Department of Agriculture Phone: 858-2552
DATE APPROVED:	June, 1985
AGREEMENT FUNDING:	$ 1,840.
TOTAL PROJECT COST:	$ 9,200.
PROJECT OBJECTIVE:	To install an automated feeding system for tie-stall barns.

SUMMARY: Mr. Howe installed the Alfa-Laval feed car in July, 1985. He has about 60 milking cows in his tie-stall barn.

The ration is adjusted for each cow once a month through the R.O.P. Program. In the winter the cows are fed five times daily, automatically, and only four times daily in the summer manually. Mr. Howe found that his butterfat test increased with this system and feels that this system has already paid for itself because it has reduced labor in feeding the cows and also saved on feed. Mr. Howe is pleased with the Alfa-Laval feed car.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Self-Feeding Dairy Ration Equipment for Dairy Barn (under T129)



PROJECT AFA NUMBER: T218

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:

Kenneth B. Graham
Graham Farms Ltd.
R. R. # 4
Centreville, N.B.
Phone: 276-3257

(cont'd T218)

PROJECT COLLABORATOR: Jack Burnham
N.B. Department of Agriculture
Phone: 392-6007

DATE APPROVED: September, 1985

AGREEMENT FUNDING: $ 2,000.

TOTAL PROJECT COST: $12,000.

PROJECT OBJECTIVE: This activity is designed to show dairy farmers a system that can be used to ease the problem of feeding grain to cows in a tie-stall barn. Feeding of grain can be increased as in most cases grain is fed two to three times daily. The objective for most dairy farmers is to increase the number of grain feedings to the herd on a daily basis. The same amount of grain is fed but in smaller amounts at any time. This allows the cow to better digest and utilize the grain, thus increasing her production. Also, for high producing cows, the spreading out of grain feeding means that less grain is going into the rumen at any one time, decreasing the chance of digestive problems. This system will be evaluated on the following criteria:

1) change in milk production
2) change in feed cost
3) labour requirements

SUMMARY: The Alfa-Laval automated feed car system is set up for a maximum of 58 cows. The feed car has an approximate running length of "I" beam track, 230 feet. The feed car automatically refills Feed 1 which is a type of feed that is given to all the cows. Feed 2 is a specialized type of feed that is given to the higher producing cows which receive both types of feed. The cows each receive specialized proportions of feed depending on their individual requirements throughout the 24-hour day.

(cont'd T218)

The farmer currently is feeding the cows 4 times daily. This increases the amount of butterfat and improves the assimilation of the feed and functioning of the digestive system.

The more accurate distribution of feed reduces the grain and concentration requirements by 10-20%. There is an increase in milk production which means that Mr. Graham can ship more milk on the same size of milk herd.

This system requires very little electrical energy for power (just enough to recharge the battery).

A computerized system would be an asset to the system, increasing the accuracy of determining the amount of feed for each individual cow.

Mr. Graham is pleased with this type of system. He has had only minor problems with adjusting the equipment. He has found it beneficial to his farm in reducing the required amount of labor in feeding the cows and improving the quality and quantity of milk production.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Automatic Dairy Cow Feed System
(under T129)

PROJECT AFA NUMBER: T232

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: James E. Bateman
R. R. # 1
Scoudouc, N.B.
Phone: 532-2455

PROJECT COLLABORATOR: D. Balzer
N.B. Department of Agriculture
Phone: 858-2552

DATE APPROVED: October, 1985

AGREEMENT FUNDING: $ 2,000.

TOTAL PROJECT COST: $10,000.

PROJECT OBJECTIVE: To install and use an automatic feeding system for 66 dairy cows in a tie-stall barn.

SUMMARY: Mr. Bateman purchased an Alfa-Laval dairy cow feeding system. He milks about 63 dairy cows and has a total herd of about 160 head. He feeds the cattle four times daily in the summer and five times daily in the winter. The system has increased his milk production and improved his herd health. He has only had to make minor adjustments to the machine and is happy with the way the system works.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Alfa-Laval Feed Car (under T129)
PROJECT AFA NUMBER:	T238
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Alex L. Henderson R. R. # 9 Moncton, N.B. Phone: 576-7408
PROJECT COLLABORATOR:	A. Saunders / D. Balzer N.B. Department of Agriculture Phone: 858-2552
DATE APPROVED:	November, 1985
AGREEMENT FUNDING:	$ 2,000.
TOTAL PROJECT COST:	$10,000.
PROJECT OBJECTIVE:	The objective is to install a feed car to automate the feeding of grain and to facilitate multiple feedings (5 or 6) per day over a 24-hour period.

SUMMARY: Mr. Henderson installed an Alfa-Laval Feeding system in December, 1985. He had a lot of problems at first in adjusting the machine due to an oxidation problem that affected the circuit system.

He milks about 50 cows in his tie-stall barn. In the summer the machine is run manually due to irregular schedule of feeding about four times daily; in the winter the cows are feed six times daily. This system has improved feed efficiency

(cont'd T238)

and also improved the butterfat test. The cow's ration is determined by the R.O.P. schedule, which is changed once a month.

Mr. Henderson is pleased with this system and recommends it to other farmers.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Swine Breeding Improvement Program (under T181-1)
PROJECT AFA NUMBER:	T304
PROGRAM:	Livestock Industry Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Brian P. Hicks R. R. # 1 Havelock, N.B. Phone: 534-2429
PROJECT COLLABORATOR:	A. Lavoie N.B. Department of Agriculture Phone: 395-3379
DATE APPROVED:	May, 1986
AGREEMENT FUNDING:	$ 450.
TOTAL PROJECT COST:	$1,500.
PROJECT OBJECTIVE:	To purchase boar semen.

SUMMARY: Mr. Hicks has been using boar semen purchased from Ontario to artificially inseminate his sows. He feels that this method has improved his pigs in structural defects and also prevents inbreeding. He recommends this method of A.I. to other farmers.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Breeding Stock Improvement - Genetic Improvement

PROJECT AFA NUMBER: T313

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Maurice Godin
Box 14, Site 13
R. R. # 1
Pokemouche, N.B.
Phone: 727-6491

PROJECT COLLABORATOR:
A. Lavoie
N.B. Department of Agriculture
Phone: 395-3379

DATE APPROVED: May, 1986

AGREEMENT FUNDING: $1,500.

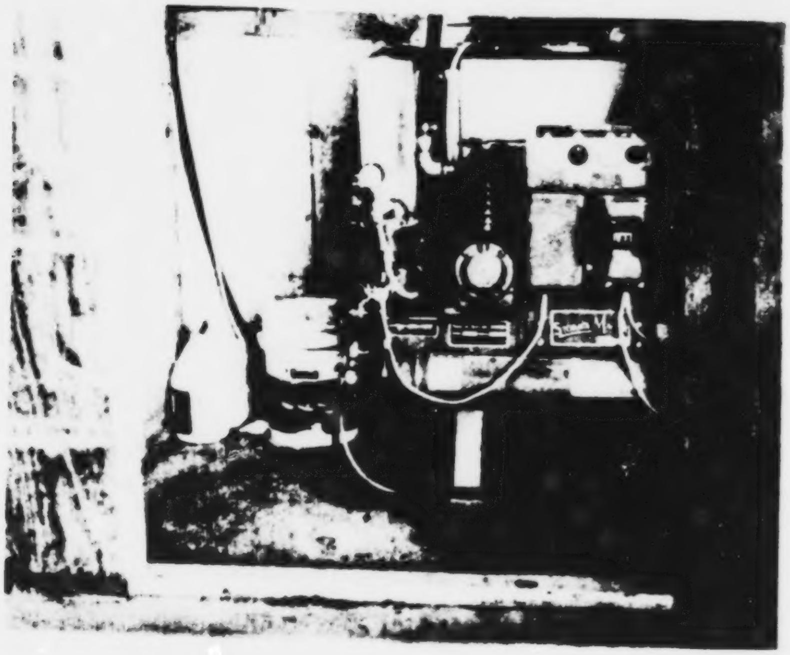
TOTAL PROJECT COST: $7,200.

PROJECT OBJECTIVE: To improve genetic breeding of stock.

SUMMARY: This project was designed to aid in purchasing purebred boars and sows, to improve breeding stock. Mr. Godin purchased three Hampshire sows, two Hampshire boars, three Duroc sows, one Duroc Boar, in October of 1985.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Potato Storage Humidification (under T195)



PROJECT AFA NUMBER: T212

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Winston & Weldon Springer
R. R. # 6
Woodstock, N.B.
Phone: 375-6625

(cont'd T212)

PROJECT COLLABORATOR:	Walter Allison N.B. Department of Agriculture Phone: 392-6007
DATE APPROVED:	September, 1985
AGREEMENT FUNDING:	$2,250.
TOTAL PROJECT COST:	$7,500.

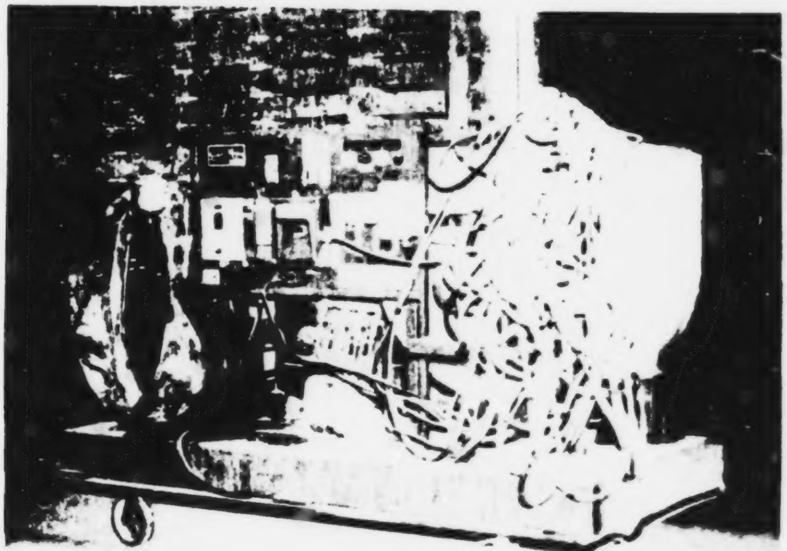
PROJECT OBJECTIVE: The major benefit achieved from this project is an improved product delivered to the processor, shipper, seed buyer and consumer. By reducing shrink (water loss) in storage, the grower is able to maintain a firmer, healthier, and better looking product. This translates directly to increased profits, since water loss is the major form of weight reduction in storage. In addition, grade-out at the final destination will be decreased through elimination of pressure bruise, blackspot bruise from handling and spongy potatoes.

Finally, the processor will also benefit because peeling losses will be reduced; spongy, bruised and pressure bruised potatoes require more peeling.

SUMMARY: Springers used a Storage Master humidification system. They found that this system reduced the weight loss of their potatoes, and it has improved the quality of the potatoes as well.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Potato Storage Humidification



PROJECT AFA NUMBER: T213

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: John & William Bubar
R. R. # 1
Hartland, N.B.
Phone: 375-6208

(cont'd T213)

PROJECT COLLABORATOR:	Walter Allison N.B. Department of Agriculture Phone: 392-6007
DATE APPROVED:	September, 1985
AGREEMENT FUNDING:	$ 4,000.
TOTAL PROJECT COST:	$18,120.
PROJECT OBJECTIVE:	To Install a Shur-Store Humidification System.

SUMMARY: The potato storage humidification system purchased by Mr. Bubar is a 5 H.P. machine. He bought the larger model because he plans to humidify two separate storage houses at one time. At the moment his machine is portable due to his narrow bins. He plans to install the machine in one area of the potato house. His system is capable of handling five bins at one time.

He is pleased with this system and has found a significant improvement in his potatoes. It is possible to bury a 75 lb. bag of potatoes in the potato bin to determine the amount of shrinkage in his potatoes. He plans on doing this experiment this fall and then testing the potatoes in the winter for shrinkage. He uses a Victoria Grain Fan in each of his bins with the humidification system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Potato Storage Humidification
PROJECT AFA NUMBER:	1215
PROGRAM:	Potato Industry Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Gerald Springer R. R. # 5 Hartland, N.B. Phone: 375-6185
PROJECT COLLABORATOR:	Walter Allison N.B. Department of Agriculture Phone: 392-6007
DATE APPROVED:	September, 1985
AGREEMENT FUNDING:	$ 2,500.
TOTAL PROJECT COST:	$ 8,500.
PROJECT OBJECTIVE:	Same as for other humidification systems.

SUMMARY: Mr. Springer uses the Shur-Store Humidification System connected to two potato houses and has had no problems with the system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Potato Storage Humidification
(under T195)

PROJECT AFA NUMBER: T216

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Max Van Cingel
R. R. # 1
Upper Kent, N.B.
Phone: 278-5569

PROJECT COLLABORATOR: Walter Allison
N.B. Department of Agriculture
Phone: 392-6007

DATE APPROVED: September, 1985

AGREEMENT FUNDING: $ 2,700.

TOTAL PROJECT COST: $ 9,000.

PROJECT OBJECTIVE: To install a Shur-Store Humidification System.

SUMMARY: Mr. Van Cingel has installed a 5 H.P. Shur-Store humidification unit in his potato storage. He uses this system with the microprocessor-based ventilation system and is satisfied with the results obtained. Mr. Van Cingel used about one-half gallon of Javex in his water tank as a disinfectant to help reduce flies and disease in the potatoes.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Potato Storage Humidification (under T195)
PROJECT AFA NUMBER:	T227
PROGRAM:	Potato Industry Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Maurice Michaud Grand Falls, N.B. E0J 1M0 Phone: 473-2720
PROJECT COLLABORATOR:	Walter Allison N.B. Department of Agriculture Phone: 392-6007
DATE APPROVED:	October, 1985
AGREEMENT FUNDING:	$ 4,000.
TOTAL PROJECT COST:	$15,000.
PROJECT OBJECTIVE:	To buy and install a potato storage humidification system.

SUMMARY: Mr. Michaud purchased a 3 H.P. Shur-Stor system which uses an advanced electropneumatic control system to create a fine, fog-like suspension of micron-size water droplets in storage enclosures. Moisture supply is increased by generating a positive vapour pressure around each tuber which greatly reduces water loss from dehydration and respiration.

Mr. Michaud is pleased with the results of using the system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Humidification (under T195)

PROJECT AFA NUMBER: T228

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Francois Ouellette
R. R. # 2
Grand Falls, N.B.
Phone: 473-1050

PROJECT COLLABORATOR:
G. Pelletier
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: October, 1985

AGREEMENT FUNDING: $ 4,000.

TOTAL PROJECT COST: $14,500.

PROJECT OBJECTIVE: To buy and install a potato storage

SUMMARY: Mr. Ouellette installed a 3 H.P. Shur-Stor Humidification system in January. It is capable of humidifying 3 bins, that store about 20,000 barrels of potatoes. He had to make a minor adjustment to the vacuum but now everything is running smoothly. He feels that there has been a big improvement in the quality of his potatoes and now can store them longer than before. He recommends this system to other farmers.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Humidification

PROJECT AFA NUMBER: T244

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Jimmy Daigle
R. R. # 1
St. Leonard, N.B.
Phone: 423-7790

PROJECT COLLABORATOR:
J. Walsh / W. Allison
N.B. Department of Agriculture
Phone: 392-6007

DATE APPROVED: December, 1985

AGREEMENT FUNDING: $ 1,200.

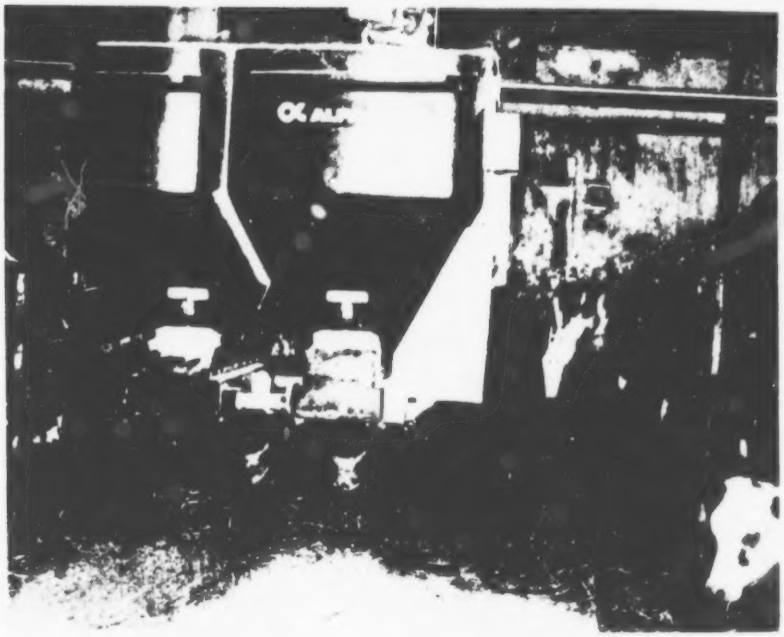
TOTAL PROJECT COST: $ 4,000.

PROJECT OBJECTIVE: To install and use a humidification system in a potato storage.

SUMMARY: Mr. Daigle installed 5 H.P. Shur-Stor humidification systems in two of his potato storages. He has used the system for two seasons and is well pleased with the results. He has found that proper humidity in the storage has reduced pressure bruising in his potatoes.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Surge Infarmation Feeding System (under T221)



PROJECT AFA NUMBER: T234

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Carvell G. Crandlemire
R. R. # 1
Bristol, N.B.
Phone: 392-6402

(cont'd T234)

PROJECT COLLABORATOR: Dave Taylor
N.B. Department of Agriculture
Phone: 453-2272

DATE APPROVED: November, 1985

AGREEMENT FUNDING: $ 3,200.

TOTAL PROJECT COST: $16,000.

PROJECT OBJECTIVE: Complete computerized feeding system for tie stall barn with 45 cows.

SUMMARY: Mr. Crandlemire uses the Alfa-Laval Infarmation feeding system which is used with the Surge Infarmation Feed Manager computer.

He presently has 40 dairy cows in this tie stall barn. When Mr. Crandlemire first started using the feeding system, he did a test to determine whether his farm would benefit from this system. He fed 26 cows for 15 days; his milk production increased to 115 litres per day and the same amount of feed that he was feeding his cattle lasted four days instead of three days. This information was enough to convince him that the feeding system was worth purchasing.

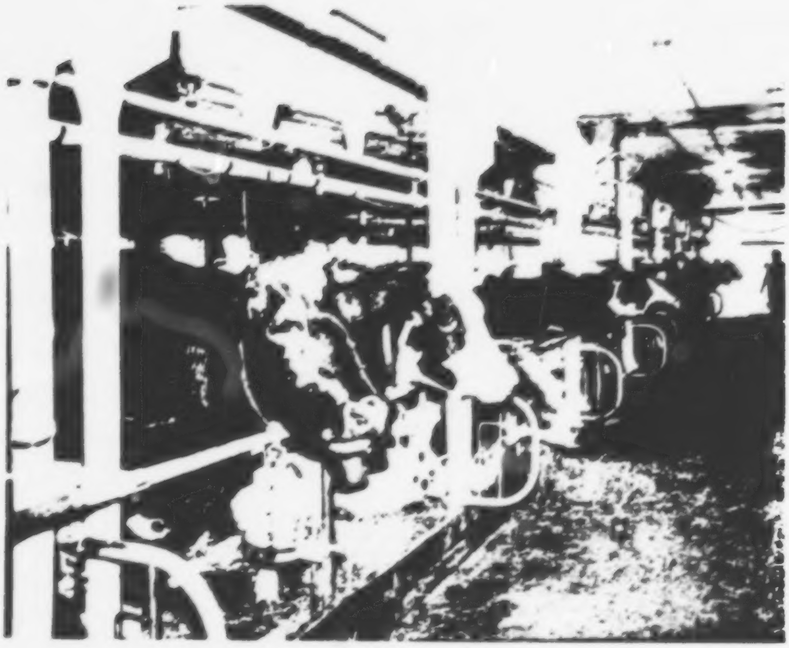
Mr. Crandlemire is not exactly sure what effect the feeding system had on his butterfat count because it was on a steady rise before he purchased the machine.

Mr. Crandlemire feeds his cows about five times daily. With this system, the cows are fed automatically whether anyone is present or not. He adjusts the scales for each cow daily after taking a reading from the computer system that automatically determines how much ration each cow requires.

This system has increased Mr. Crandlemire's milk production. He has sold 13 cows from his herd and plans to sell more to help maintain the amount of milk that he had before using the feeding system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Computerized Grain Feeding System for Tie Stall Barns (under T221)



PROJECT AFA NUMBER: T243

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
George W. Harvey
R. R. # 1
Petitcodiac, N.B.
Phone: 756-2010

(cont'd T243)

PROJECT COLLABORATOR: D. Taylor / M. Snodden
N.B. Department of Agriculture
Phone: 453-2272 / 453-2457

DATE APPROVED: December, 1985

AGREEMENT FUNDING: $ 1,600.

TOTAL PROJECT COST: $ 8,000.

PROJECT OBJECTIVE: To install and use a computer feeder for tie stall dairy barn.

SUMMARY: Mr. Harvey installed the Chore-Time automatic feeder in January 1986. This system was originally designed for feeding chickens but was adapted for dairy cows.

He has about 70 head of dairy cattle that are fed by this method. Each cow has its own individual ration that is determined by the D.H.A.S. test every month. The cows are fed simultaneously by a flex-auger which runs around the tie stall barn just above the cows. A small hopper above the cow's head is filled by this auger and is run by a timing device. Presently the cows are fed four times daily in the summer, and increased to five times daily in the winter. The feed is stored in a grain tank outside the barn and brought into the system by an auger which automatically refills the system as the ration gets low.

There is no waste of feed by this method, therefore, creating a saving on costs. It has not changed Mr. Harvey's milk production or his butterfat. Mr. Harvey is pleased with this system and has had no major difficulties with it since installing it.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Chore-Time Flex Auger Feeder (under T221)
PROJECT AFA NUMBER:	T247
PROGRAM:	Livestock Industry Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Charles Kelly R. R. # 9 Moncton, N.B. Phone: 382-3888
PROJECT COLLABORATOR:	D. Taylor / M. Snodden N.B. Department of Agriculture Phone: 453-2272 / 453-2457
DATE APPROVED:	December, 1985
AGREEMENT FUNDING:	$ 2,000.
TOTAL PROJECT COST:	$10,000.
PROJECT OBJECTIVE:	This is an automated system for feeding dairy ration.

SUMMARY: Mr. Kelly installed a Chore-time feeder in December. It works similar to Mr. George Harvey's Chore-Time feeder. He has 36 milking cows and a total herd of 80.

He feeds the cows six times daily in the winter and four times daily in the summer while the cows are out on pasture. He feeds one type of feed in the feeder. The higher producing cows receive an additional six lbs. of feed twice daily. The amount of ration is determined by the R.O.P. program once a month. This system works

(cont'd T247)

automatically by a timer. Mr. Kelly feels that this system works well and saves a lot of time and labour. He feels that his cows are not producing more milk since using this system because they were fed well before he installed it. He has noticed an improvement in his butterfat test, and recommends this system to other farmers.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Computerized Stanchion Feeding (under T221-1)
PROJECT AFA NUMBER:	T274
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Gerard Duivenvoorden Armstrong Brook, N.B. Phone: 237-2087
PROJECT COLLABORATOR:	M. Snoddon / D. Taylor N.B. Department of Agriculture Phone: 453-2457 / 453-2272
DATE APPROVED:	February, 1986
AGREEMENT FUNDING:	$ 3,020.
TOTAL PROJECT COST:	$15,100.
PROJECT OBJECTIVE:	This system uses the Surge program for ration formulation and Chore-Time automatic feeders deliver the feed.

SUMMARY: Gerard Duivenvoorden installed the Surge Infarmation computerized feeding system in April, 1986. He is pleased with the system and has had no problems with it.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Automatic Seeder (under T233)

PROJECT AFA NUMBER: T245

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Lloyd A. Brown
Brookdale Nurseries Ltd.
P. O. Box 422
Newcastle, N.B.
Phone: 622-3424

PROJECT COLLABORATOR:
V. Taylor
N.B. Department of Agriculture
Phone: 773-7091

DATE APPROVED: May, 1985

AGREEMENT FUNDING: $ 2,000.

TOTAL PROJECT COST: $ 8,500.

PROJECT OBJECTIVE: Automatic seeding of annual bedding plants to improve productivity.

SUMMARY: Lloyd Brown purchased a NIAGRA - Seeder to plant a wide variety of bedding plants and vegetables. A Hecon-plug mix is moistened and put into the trays by a filler. This electric seeder can seed about 60 - 100 trays depending on how many varieties of seeds are being sown. Also, it is time consuming to change the trays.

This machine has many extra features, such as the multi-drop feature, which can drop from 1 - 5 seeds per slot in each tray. This is beneficial for plants which have a low germination rate, such as, the flower Impatients.

(cont'd T245)

This system has three different manifolds which handles 50 different varieties of seeds. The manifold must be changed depending on the size of the seed. The system can also use two different sized germinating trays.

Mr. Brown is well pleased with this seeder as it is faster and more precision planting is done. He finds that he has about 95% germination. The only improvement that Mr. Brown is adding to this system is an automatic covering head, which covers the seeds with a very light blanket of soil.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Flock Breeding Stock Expansion and Genetic Improvement (A Maximum of 15 Farms can Qualify)
PROJECT AFA NUMBER:	T253
PROGRAM:	Livestock Industy Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	N.B. Sheep Breeders Association c/o Peggy Balzer, Secretary Treasurer R. R. # 1 Petitcodiac, N.B. Phone: 756-8263
PROJECT COLLABORATOR:	B. Trenholm N.B. Department of Agriculture Phone: 453-2457
DATE APPROVED:	January, 1986
AGREEMENT FUNDING:	$ 450/farm - $ 6,750.
TOTAL PROJECT COST:	$22,500.
PROJECT OBJECTIVE:	The object is to increase the number of locally produced lambs in N.B. to satisfy the full demand of the market and therefore eliminate the necessity for the Co-op to purchase lambs produced in P.E.I. and N.S. To improve the quality of local lambs to meet the present and future market demand for larger carcasses. This will be accomplished by assisting only in the purchase or retention of approved R.O.P. tested breeding stock.

(cont'd T253)

SUMMARY: The purpose of this program is to encourage sheep farmers to improve the quality of their breeding stock and to encourage people to get rid of their poor stock.

To be eligible for these funds, the farmer must be on the R.O.P. program (rate of production). The lambs are weighed at a 50-day point and again at a 100-day point. This is done to determine which ewes are to be kept.

Every ewe is indexed, the birthdate of the lamb and the ewe's number are recorded, the lambs are tagged at birth. Mrs. Balzer keeps between 10 - 15% of her lambs every year; the rest are sold at private sales. Mrs. Balzer has mainly Suffolk. These sheep are sold for meat, but wool is obtained from them as a bi-product.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Overum Tive Jet Fertilizer Spreader (under T254-R2)

WHITE FARM EQUIPMENT
RENAULT

PROJECT AFA NUMBER: T368

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Grand Falls Milling Co. Ltd.
Grand Falls, N.B.
Phone: 473-2975

(cont'd T368)

PROJECT COLLABORATOR: C. Everett
N.B. Department of Agriculture
Phone: 453-2691

DATE APPROVED: April, 1986

AGREEMENT FUNDING: $ 6,000.

TOTAL PROJECT COST: $22,000.

PROJECT OBJECTIVE: To purchase and use an Overum Tive Jet Fertilizer Spreader.

SUMMARY: The Overum Tive Jet Fertilizer Spreader 4018 was purchased and used this spring. It was used to spread 50 acres of urea, 650 acres of grass seed, 75 lb./acre of ammonium nitrate for 650 acres. The spreader holds 4 metric tonne, the boom spread is 18 m. It can be hauled by a smaller tractor of about 80 H.P. It was used mostly for Grand Falls Milling Co. Ltd., but it is possible that it will be contracted out next year. They felt that it did an excellent job.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Acceleration of Integrated Cereal Management (A Maximum of 20 Projects Can Qualify)
PROJECT AFA NUMBER:	T317
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Jerome Damboise N.B.D.A. Grand Falls, N.B. Phone: 473-5515
PROJECT COLLABORATOR:	D. Walter N.B. Department of Agriculture Phone: 453-2172
DATE APPROVED:	May, 1986
AGREEMENT FUNDING:	$1,700./project
TOTAL PROJECT COST:	$113,333.
PROJECT OBJECTIVE:	To accelerate to producers on a commercial scale (maximum 100 acres/farm), the use and benefits of growth regulators, fungicides and high levels of fertilizer nitrogen.

SUMMARY: This project has been increased to allow more farmers to qualify. There are 11 projects in the Grand Falls area, 17 projects in the Wicklow area and five in the Moncton area. The number of acres has been decreased to 50 acres/farm to be approved.

(cont'd T 317)

Barley, Spring and Winter wheat are the types of grain to be used. This project only provides for the cost of applying extra nitrogen, growth regulator and fungicide, that is, only the chemicals that were not applied before this program was initiated.

There must be a qualified person to check each field to tell the farmer when the growth regulator should be applied. There are only about two days during which this chemical can be applied. Otherwise it will defeat the purpose of using it.

Due to the lack of moisture this year, it will reduce the benefits of these chemicals. However it still will be better than not applying the extra chemicals at all.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Equipment for Application of Hay Drying Agents (A Maximum of 10 Producers Can Qualify)
PROJECT AFA NUMBER:	T371
PROGRAM:	Livestock Feed Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Co-op Atlantic c/o Earl DeMerchant P. O. Box 750 Moncton, N.B. Phone: 858-6029
PROJECT COLLABORATOR:	C. McLean N.B. Department of Agriculture Phone: 433-3073
DATE APPROVED:	May, 1986
AGREEMENT FUNDING:	$750/unit - $7,500.
TOTAL PROJECT COST:	$25,000.
PROJECT OBJECTIVE:	To encourage interested producers throughout the Province of New Brunswick to acquire proper application accessories to allow them to make use of available hay drying agents (dissicants).

SUMMARY: This system consists of a storage tank and boom that is attached to the mower. The storage tank sets on top of the mower and the boom is put lengthwise across the front of the mower, towards the bottom.

(cont'd T371)

The material used is a mixture of potassium carbonate and sodium carbonate mixed with water. It is sprayed on the hay as it is being mowed and causes the hay to dry faster due to the cell wall deteriorating quicker. It cuts down drying time to about 12 - 14 hours.

The dissicant allows the hay to retain more of its bright green color and nutrients. Experiments were done on P.E.I. on the quality of the hay and it was found that there was an increase of 2% protein. It also prevents less leaf loss to the plant and there is not as rough a texture. Even though rain may hit the hay after it has been mowed, the quality of the hay is still improved.

This system is a great improvement in the quality of the hay and the people using it are well satisfied with the results that they have obtained.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Speedling Systems (under T058)

PROJECT AFA NUMBER: T173

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Mederic Robichaud
R. R. # 1
Rogersville, N.B.
Phone: 775-2376

PROJECT COLLABORATOR: C. Goguen
N.B. Department of Agriculture
Phone: 523-9796

DATE APPROVED: July, 1985

AGREEMENT FUNDING: $ 450.

TOTAL PROJECT COST: $1,500.

PROJECT OBJECTIVE: To purchase speedling trays for starting bedding plants.

SUMMARY: Mederic Robichaud bought 250 speedling trays to grow about three acres of broccoli and brussel sprouts. He finds that the plants grow faster in these trays and he is well pleased with the results.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Speedling Systems
(under T058)

PROJECT AFA NUMBER: T176

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR: Donald D. Daigle
R. R. # 4, Site 2
Acadieville, N.B.
Phone: 775-6972

PROJECT COLLABORATOR: C. Goguen
N.B. Department of Agriculture
Phone: 523-9796

DATE APPROVED: July, 1985

AGREEMENT FUNDING: $ 1,000.

TOTAL PROJECT COST: $ 8,000.

PROJECT OBJECTIVE: To purchase speedling trays to begin bedding plants

SUMMARY: Donald Daigle purchased 300 speedling trays to grow cabbage, broccoli, cauliflower, and brussel sprouts. These trays produce sturdier plants due to more accurate spacing in the trays.

He starts his plants in a greenhouse in early spring and has plans to improve his methods by raising the plants off the floor, providing warmth to the root systems to give the plant a better start. He also wants to install a clock to monitor water, to make all the watering automatic.

Mr. Daigle feels that he can have these trays pay for themselves in about two and a half years.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Speedling Systems (under T058)
PROJECT AFA NUMBER:	T177
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Rhéal Leger Box 145 Rogersville, N.B. Phone: 775-6910
PROJECT COLLABORATOR:	C. Goguen N.B. Department of Agriculture Phone: 523-9796
DATE APPROVED:	July, 1985
AGREEMENT FUNDING:	$ 540.
TOTAL PROJECT COST:	$ 1,800.
PROJECT OBJECTIVE:	To purchase speedling trays to start bedding plants.

SUMMARY: He is not going to buy the trays this year but possibly will buy them next year.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Speedling Systems (under T058)
PROJECT AFA NUMBER:	T178
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Jean-Eude Chiasson R. R. # 3 Box 458 Rogersville, N.B. Phone: 775-6033
PROJECT COLLABORATOR:	C. Goguen N.B. Department of Agriculture Phone: 523-9796
DATE APPROVED:	July, 1985
AGREEMENT FUNDING:	$ 630.
TOTAL PROJECT COST:	$2,100.
PROJECT OBJECTIVE:	To purchase speedling trays to start bedding plants.

SUMMARY: He does not plan to purchase these trays this year.

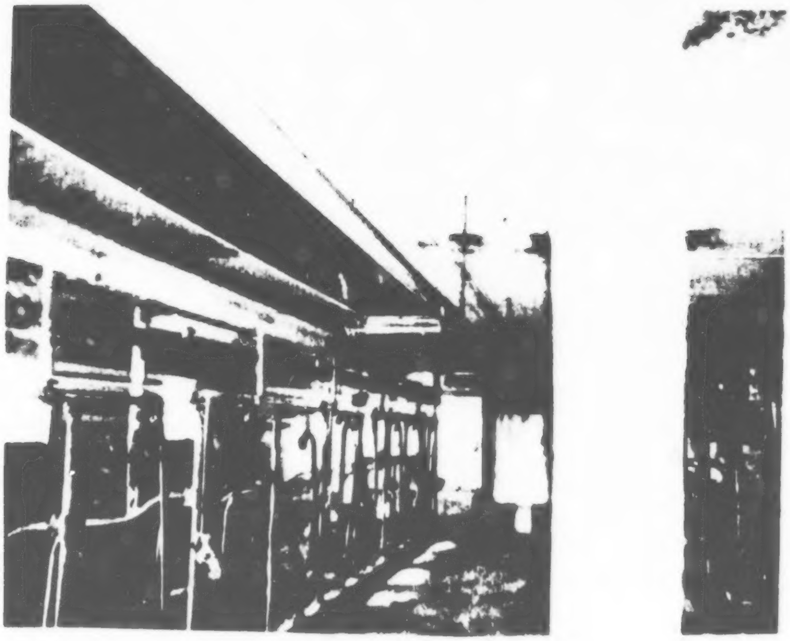
TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Speedling Systems (under T058)
PROJECT AFA NUMBER:	T179
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Acceleration
PROJECT ORIGINATOR:	Fernand Cormier Cold Crop Farm R. R. # 1 Rogersville, N.B. Phone: 775-6456
PROJECT COLLABORATOR:	C. Goguen N.B. Department of Agriculture Phone: 523-9796
DATE APPROVED:	July, 1985
AGREEMENT FUNDING:	$ 1,000.
TOTAL PROJECT COST:	$ 6,300.
PROJECT OBJECTIVE:	To purchase speedling trays for starting bedding plants.

SUMMARY: He does not plan to purchase these trays this year.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Forage-Belt Feeder (under T015)



PROJECT AFA NUMBER: T183

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Howard Culberson
R. R. # 6
Woodstock, N.B.
Phone: 328-6963

(cont'd T183)

PROJECT COLLABORATOR: Dave Taylor
N.B. Department of Agriculture
Phone: 453-2272

DATE APPROVED: July, 1985

AGREEMENT FUNDING: $ 1,000.

TOTAL PROJECT COST: $ 9,900.

PROJECT OBJECTIVE: This activity is designed to provide efficient systems of feeding silage to dairy herds. Of particular concern is the mechanization of haylage movement from the silo to dairy herds housed in tie-stall barns and to also include systems for feeding in free-stall barns as well.

SUMMARY: The farmer currently has 56 dairy cattle which he feeds clover silage as part of their diet. The silage is dumped onto a Patz Belt Feeder and moves down the overhead plow type conveyor, plowing off proportions automatically to each cow. The machine can also be set manually (by hand) to give rations to the cows.

This machine saves 100% on labour in feeding silage to the cows. The farmer is pleased with the belt feeder and was able to report that he has had no problems with the feeder.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Liquid Whey Feed System - Hogs (under T002)

PROJECT AFA NUMBER: T191

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:
Stephen Moffett Ltd.
Penobsquis, N. B.
Phone: 433-4692

PROJECT COLLABORATOR: (no name available)

DATE APPROVED: September, 1985

AGREEMENT FUNDING: $ 7,500.

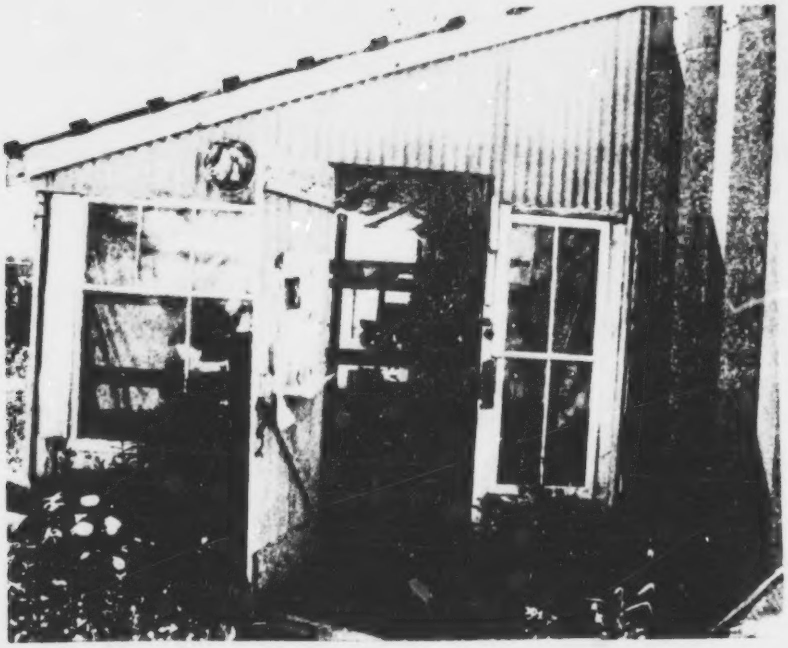
TOTAL PROJECT COST: $25,000.

PROJECT OBJECTIVE: The feeder barn will be modified to increase from 400 to 600 feeder and install the Big Dutchman and Hydramix Feed System.

SUMMARY: This is the same as the by-product feeding of hogs by Marlene Moffett Ltd.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Unheated Greenhouse (under T106)



PROJECT AFA NUMBER: T182

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Acceleration

PROJECT ORIGINATOR:

Byron McGrath
R. R. # 1
Centreville, N.B.
Phone: 276-4691

(cont'd T182)

PROJECT COLLABORATOR:	Jack Burnham N.B. Department of Agriculture Phone: 392-6007
DATE APPROVED:	June, 1985
AGREEMENT FUNDING:	$ 200.
TOTAL PROJECT COST:	$1,000.
PROJECT OBJECTIVE:	The object of this project is to increase the number of unheated greenhouses in New Brunswick for the cultivation of early vegetables, and a more profitable production of vegetables by the adoption of this technique.

SUMMARY: Mr. McGrath uses the greenhouse along with another technology program, "Greensprouting of Potatoes". He puts about 25 lbs. of potatoes, one layer thick, in each tray. These are stacked one on top of the other to the ceiling. He installed a heater system in the greenhouse because he starts greensprouting early in March and the temperature outside is not warm enough to keep the potatoes heated at 70° F. to break dormancy. He is pleased with the results of this greenhouse.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Single Row Bulk Hopper Type Grimme Harvester
PROJECT AFA NUMBER:	T003
PROGRAM:	Potato Industry Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Jacques M. Laforge P. O. Box 2471 Grand Falls, N.B. Phone: 473-5549
PROJECT COLLABORATOR:	G. Pelletier N.B. Department of Agriculture Phone: 473-5515
DATE APPROVED:	January, 1985
AGREEMENT FUNDING:	$18,000.
TOTAL PROJECT COST:	$45,000.

PROJECT OBJECTIVE:

To demonstrate the single row bulk hopper type Grime harvester as a means to mechanize potato harvesting on a mixed farm operation on which 75 acres of potatoes are grown annually while:

1) keeping to a minimum the cost and size of harvester
2) keeping to a minimum the cost and the size of tractor pulling the harvester
3) reducing traffic in the field thus reducing soil compaction problems and decreasing costs of operation (energy and maintenance)

(cont'd T003)

4) reducing manpower requirements on harvester and in the field
5) being able to use this machinery for other crops (ie. turnips and onions)
6) keeping potato bruising to a minimum

SUMMARY: Mr. Laforge purchased the single row bulk hopper type Grimme Harvester HL 750 and used it the fall of 1985.

A lever adjusts the depth of digging which is set usually once for each new field. The potatoes are collected in a hopper with a capacity of about 35 barrels. This eliminates the requirement of a truck running beside the harvester thus reducing soil compaction in the field. A truck is kept at one end of the field and the hopper is emptied each time the harvester reaches the end of the row. Two trucks, one at each end of the field, would be required for large fields.

As the potatoes ride up the bed of the harvester, they are transferred to another bed which separates the big rocks and potato tops. A system of brushes is used to separate the potatoes and rocks onto separate belts. The speed of the brushes can be regulated to almost eliminate any rocks or potatoes from going onto the wrong belt. Two people work on the harvester to pick out any rocks that go onto the potato belt and any potatoes that go onto the rock belt.

The harvester has a capacity of approximately 75 acres.

The operator made quite a few adjustments to the machine, but was pleased with the way it runs. He feels that it will operate even better this year, now that he has everything adjusted the way he wants it. Parts are readily available and service men are trained to help him with any repairs that are necessary.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Hardi Mini Variant Sprayer

PROJECT AFA NUMBER: T004

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Stephen E. Rosenfeld
Harvey Station, N.B.
Phone: 453-4573 days or 366-2816 home

PROJECT COLLABORATOR: D. Doohan
N.B. Department of Agriculture
Phone: 453-2108

DATE APPROVED: January, 1986

AGREEMENT FUNDING: $ 2,350.

TOTAL PROJECT COST: $ 4,700.

PROJECT OBJECTIVE: Purchase of a Hardi Mini Variant crop sprayer principally for strawberries but will also try raspberries and vegetables. Sprayer is supposed to offer increased crop protection by better penetration of leaf canopy with greatly reduced volume of water.

SUMMARY: Stephen Rosenfeld uses the Hardi Mini Variant crop sprayer for strawberries. It uses a system of air flow combined with low liquid volume and low pressure.

(cont'd T004)

The mini variant is a three point hitch mounted with a tank capacity of 105 gallons. There are 10 adjustable nozzles spaced along the 20' boom to ensure correct nozzle placement for individual crop conditions. Each nozzle on the boom is not only fed by its own feed line but also has its own 4" air hose with air fed into it from a centrally located offset fan. This fan allows an even amount of air to be expressed through all the air hose across the boom. The air stream ruffles the dense crop foliage and ensures adequate chemical penetration into the crop. This reduces chemical wastage because the spray is put directly in the row where it is needed and not in the walkways.

The boom is manually controlled and can be reached while remaining on the tractor.

The mini variant sprayer is ideal only for strawberry plants. Other crops, such as corn, will not receive adequate coverage to make using the sprayer beneficial.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Demonstration and Evaluation of Precision Air Fertilizer Spreader

PROJECT AFA NUMBER: T007

PROGRAM: Livestock Feed Development / Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Valley Spreading Services Ltd.
c/o Keith Jenson
New Denmark, N.B.
E0J 1T0
Phone: 553-6733

PROJECT COLLABORATOR:
C. Everett
N.B. Department of Agriculture
Phone: 453-2691

DATE APPROVED: January, 1985

AGREEMENT FUNDING: $ 5,000.

TOTAL PROJECT COST: $18,000.

PROJECT OBJECTIVE: To evaluate the effectiveness of a precision air fertilizer spreader. To demonstrate the use of this technology to farmers through the means of a custom spreading service.

SUMMARY: The Overumtive Jet pneumatic precision spreader for fertilizer was used on a test run of 300 acres. It is a fairly simple machine to operate and there are few adjustments to be made to the system. It holds 1.3 metric tonne and it can be used to spread grain as well as fertilizer.

Mr. Jensen is pleased with the way the machine operates.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Manure Application by Irrigation

PROJECT AFA NUMBER: T013

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Stephen Moffett Ltd.
Penobsquis, N.B.
Phone: 433-4692

PROJECT COLLABORATOR: D. Walker
N.B. Department of Agriculture
Phone: 453-2172

DATE APPROVED: February, 1985

AGREEMENT FUNDING: $ 8,000.

TOTAL PROJECT COST: $21,400.

PROJECT OBJECTIVE: Irrigation equipment will be used to experiment with the spreading of liquid hog manure on Winter Wheat in the Spring. Specific objectives are:

1) to spread manure at a lower cost (than hauling with truck or tractor)
2) to reduce soil compaction
3) to improve timing of appliciation, (ie. early spring on Winter Wheat and grass land)
4) to be able to reach areas which cannot be spread by truck and tractor.

(cont'd T013)

SUMMARY: Stephen Moffett purchased irrigation equipment to spread about 110 acres with liquid manure. A pipeline system is laid out across the field and a travelling gun spreads the manure evenly onto the crop. The benefits to be achieved from this system are that it will fertilize the fields, get rid of excess manure in the lagoons and reduce soil compaction.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Fish Silage for Beef Cattle
PROJECT AFA NUMBER:	T025
PROGRAM:	Livestock Industry Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	H. E. Perry & R. Weir Coles Island, N.B. Phone: 362-5370
PROJECT COLLABORATOR:	M. Snodden N.B. Department of Agriuclture Phone: 453-2457
DATE APPROVED:	April, 1985
AGREEMENT FUNDING:	$12,250.
TOTAL PROJECT COST:	$17,500.
PROJECT OBJECTIVE:	To prepare a fish silage for beef cattle and to evaluate the silage performance of the cattle fed.

SUMMARY:

The ensiling process did not work and the silage is not suitable for feed. The reasons for this failure are not certain, but likely relate to ambient temperature at the time of ensiling, along with the fact that frozen fish was used.

This project was initiated largely at the insistance of Mr. Weir with very little interest shown on the part of Mr. Perry. Mr Perry is not interested in pursuing this project further.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Assess the Practical Value of Automatic Detachers for Milking Systems in Tie Stall Barns

PROJECT AFA NUMBER: T027

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Walter R. Tabor
Sussex Corner, N.B.
E0E 1R0
Phone: 433-4032

PROJECT COLLABORATOR: E. A. Eagles
N.B. Department of Agriculture
Phone: 433-3073

DATE APPROVED: March, 1985

AGREEMENT FUNDING: $ 1,200.

TOTAL PROJECT COST: $ 1,440.

PROJECT OBJECTIVE: To purchase automatic detachers for milking systems in a tie stall barn.

SUMMARY: Walter Tabor purchased the Little Champ Automatic Detachers as a labour saving device that works efficiently, while eliminating a great deal of the bending and knee stress that has become a problem in the operation of large tie stall barns. These detachers will also eliminate the over milking that often results when there are more cows per man than a man can handle. Also, it is a preventive measure against mastitis.

(cont'd T027)

The only problem with the detachers is that they operate under a vacuum and sometimes sawdust can be sucked up into the detachers and it plugs the system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Beef Feeding System to Handle and Test a New Potato By-product

PROJECT AFA NUMBER: T028

PROGRAM: Livestock Development Technology

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Ben Brake
R. R. # 3
Bath, N.B.
Phone: 278-3385

PROJECT COLLABORATOR: Anne Marie St. Laurent
Agriculture Canada
Phone: 452-3260

DATE APPROVED: February, 1985

AGREEMENT FUNDING: $18,400.

TOTAL PROJECT COST: $18,400.

PROJECT OBJECTIVE:

1) To test the new filter cake material available from McCain Foods Ltd. to determine the following:
    a) feed value
    b) palatability
    c) approximate amount that can be fed
    d) cost benefits.

2) To develop a system of handling this material that is both convenient to work with and feasible from a cost standpoint.

(cont'd T0280

SUMMARY: Feed costs are the largest and most variable single cost in beef production. This project is an attempt to gain results on an actual on-farm situation with regards to both the cost benefits of the feed and the type of facilities and feeding equipment that will be necessary to handle this by-product.

The potato by-product of processed potatoes used is known as potato filter cake. The drier filter cake offers several potential advantages over the wetter product. With the drier filter cake, it may be possible to use a higher proportion in the diet; fermentation losses in storage may be reduced. Fermentation causes a reduction in protein value of the feed; therefore, it is important that the potato filter cake is not stored too long before using. Mr. Brake has a storage pit where the filter cake can be dumped into one end of the pit, when the product is delivered, so that the older product can be used before the new by-product.

The farmer used about 90 beef cattle which were split into three test groups. All the groups were fed hay silage and grain. One group was fed one-half cull potatoes and one-half filter cake; another group was fed all potatoes; and the last group was fed straight filter cake. Mr. Brake found that there was very little difference between the cattle which were fed straight filter cake and those fed straight potatoes.

The storage pit holds about 40 tons of filter cake. The filter cake is well liked by the cows, also their diet is supplemented with hay and grain.

Mr. Brake's barns are a Western Canada Feed Lot style. Each of the four pens is capable of holding about 125 head. Long troughs extend down the middle which split the pens into two sides. A pathway down the middle is large enough for a vehicle to drive down through. He fills the troughs with a SS Loader, twice daily.

TECHNOLOGY PROJECT [illegible]PORT

PROJECT TITLE: Computerized Grain Feeding System for a 44 Cow Tie Stall Barn

PROJECT AFA NUMBER: T031

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
David Duplessis
R. R. # 1
Mouth of Keswick, N.B.
Phone: 363-3507

PROJECT COLLABORATOR:
D. Taylor
N.B. Department of Agriculture
Phone: 453-2272

DATE APPROVED: February, 1985

AGREEMENT FUNDING: $ 7,500.

TOTAL PROJECT COST: $16,455.

PROJECT OBJECTIVE: To purchase and install a computerized feeding system in a tie stall barn.

SUMMARY: David Duplessis installed the Surge Computer and Chore-time Automatic Feeding System in May, 1985. He is pleased with the system and has had no problems with it.

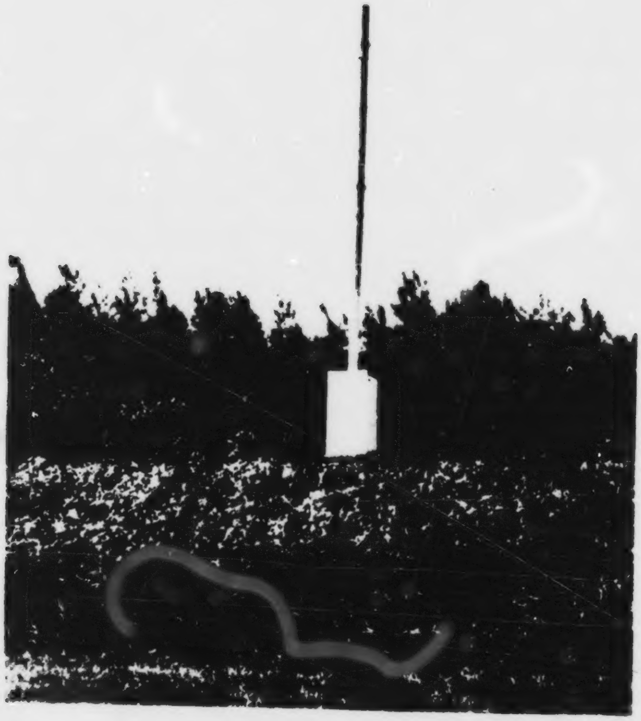
TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Electric Pruning Equipment
PROJECT AFA NUMBER:	T050
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Donald Coburn Mouth of Keswick, N.B. Phone: 363-2014
PROJECT COLLABORATOR:	G. W. Reed N.B. Department of Agriculture Phone: 453-2108
DATE APPROVED:	May, 1985
AGREEMENT FUNDING:	$ 1,154.50
TOTAL PROJECT COST:	$ 2,309.00
PROJECT OBJECTIVE:	Evaluation and adoption of electric pruning equipment in N.B. orchards.

SUMMARY: Donald Coburn purchased a Friend Kwik Kut electric pruning saw which is operated by a gasoline operated generator. It has a 6 foot pole, with the trigger switch on the side. Mr. Coburn finds this to be an effective means of pruning trees, as it eliminates the use of ladders or climbing of the trees. He feels that it is extremely important to wear safety glasses while pruning.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Introduction and Evaluation of the Rothamsted Suction Trap for Improved Monitoring of Insects Harmful to the Potato Crop



PROJECT AFA NUMBER: T054

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:

Richard H. Parry
N.B.D.A.
R. R. # 2
Florenceville, N.B.
Phone: 392-6007

(cont'd T054)

PROJECT COLLABORATOR: G. Boiteau
Agriculture Canada
Phone: 452-3260

DATE APPROVED: March, 1985

AGREEMENT FUNDING: $ 9,750.

TOTAL PROJECT COST: $38,000.

PROJECT OBJECTIVE: The general objective is to introduce and evaluate the use of the 12.2m Rothamsted Suction Trap in monitoring the dispersal of insects harmful to the potato crop in New Brunswick.

1) To evaluate the effectiveness of suction traps in the early detection of flights of the green peach aphid, Myzus persicae, and in determining the degree of infestation risk to the crop.

2) To evaluate the effectiveness of suction traps in detecting the migratory flights of aphid species known or suspected to be potential vectors of potato virus Y (PVY).

SUMMARY: The 12.2m Rothamsted Suction Trap is an aphid trap that is being used at the Wicklow N.B.D.A. Similar traps are currently being used across Europe. This trap was custom built in Quebec; the only other trap like this in Canada is being used at Laval University in Quebec.

This trap is a monitor to use when the aphids are present between June and September. It can trap only the winged aphids and other winged insects in the area. In early summer, aphids colonize and multiply sucking on leaves to feed, extracting valuable sugars and nutrients. Aphids can transmit viruses causing the plants to be less healthy. This weakens the plant's yield by about 10%. This

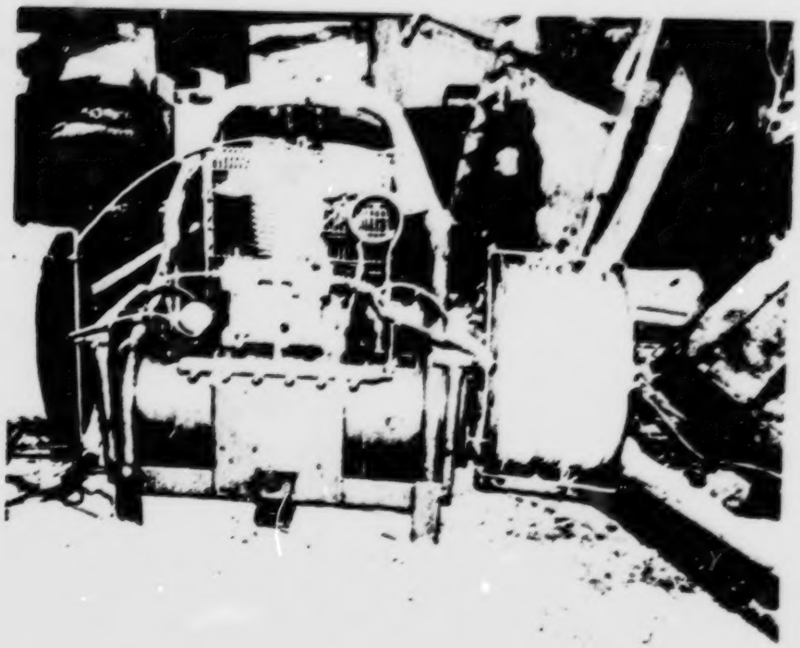
(cont'd T054)

is a method to try and determine which aphids are actually transmitting the virus. Since not all aphids are attracted to the yellow colour, the Rothamsted Trap is an improvement over the yellow pan traps which are presently used to detect aphids. The Rothamstead Trap is able to attract a lot more different types of aphids. This suction trap has only been collecting aphids for a few weeks but Mr. Parry is pleased with the results.

This study will take place over a three year period. The trap needs only minor adjustments, but otherwise the project is running smoothly.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Mechanized Pneumatic Pruning in North East America to the Apple Industry in New Brunswick



PROJECT AFA NUMBER: T057

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Allen Dukeshire
R. R. # 2
Woodstock, N.B.
Phone: 328-2973

(cont'd T057)

PROJECT COLLABORATOR: G. W. Reed
N.B. Department of Agriculture
Phone: 453-2108

DATE APPROVED: March, 1985

AGREEMENT FUNDING: $ 1,328.

TOTAL PROJECT COST: $ 2,655.

PROJECT OBJECTIVE: The intention of this project is to reduce the number of man hours of labour required to prune a given orchard. To reduce the annual cost per acre and evaluate the possibility of mechanical pruning as a method of pruning for commercial growers' adaption throughout the province. There are presently four methods of pruning trees: the conventional hand pruning, the electric saw pruning, the hydraulic and pneumatic systems.

SUMMARY: The pneumatic pruning system can be used as a portable unit or a 3 point hitch attachment. One hundred and fifty feet to 200 feet of air hose is used to supply power to the shears or saws. The selection of variable length handles permits the operator to work from the ground and prune from the outside of the tree as is presently recommended for N.B. orchards. The high speed for cutting saws and power saws will greatly reduce operator fatigue.

The project was conducted in the 60 acre orchard of the participating grower and used on both standard and semi-dwarf trees.

The farmer used the equipment all spring beginning at the end of February while the trees were still dormant. Mr. Dukeshire had no real problem with this equipment and is pleased with the results. He is able to do a more complete job and the quality of the work is improved. The machine is capable of having six people pruning different trees at the same time. Mr. Dukeshire has only enough equipment at this time for two people.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Crop Preservative on Round Bale Hay

PROJECT AFA NUMBER: T060

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: David K. Brown
R. R. # 3
Sussex, N.B.

PROJECT COLLABORATOR: C. McLean / M. Snodden
N.B. Department of Agriculture
Phone: 433-3073 / 453-2457

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $ 675.

TOTAL PROJECT COST: $1,350.

PROJECT OBJECTIVE: To test preservative on round bale hay to allow for earlier harvesting.

SUMMARY: A large number of livestock producers still use hay as their only source of stored forage. However, in seasons where rainfall is high, making hay tends to be difficult because of the time required to sufficiently dry down the crop.

David Brown installed a Gandy Applicator on a round hay baler for the 1985 haying season. A portion of the round bales produced were treated with a preservative on first and second cut hay. Mr. Brown had great success with applying "Silo Guard" to treat the hay and continued to use the product in the 1986 season.

(cont'd T060)

The Gandy Applicator is run by a 12-volt electric motor that can be controlled from the tractor. The powder is spread on the hay by two distributors which fan the powder onto the hay as it is being baled. This powder keeps the moisture level of the hay down, allowing the hay to be baled faster and the hay to retain more of its bright green color and nutrients. It also prevents leaf loss to the plant.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Demonstration of Green Manure Cultivation
PROJECT AFA NUMBER:	T065
PROGRAM:	Potato Industry Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Ghislain J. Pelletier N.B.D.A. Grand Falls, N.B. Phone: 473-5515
PROJECT COLLABORATOR:	J. Damboise N.B. Department of Agriculture Phone: 473-5515
DATE APPROVED:	April, 1985
AGREEMENT FUNDING:	(1985-1987) $ 6,600.
TOTAL PROJECT COST:	(1985-1987) $ 6,600.
PROJECT OBJECTIVE:	To determine what effect green manure cultivation has on potatoes.

SUMMARY: This project takes place on rented land of Edmund and Daniel Lévesque in St. Andre, Grand Falls, N.B. Last year, Russet Burbank Potatoes were planted on this land and the yield was determined. This year 10 sub-plots were set up on the same land with nine different crops and potatoes as a control crop.

(cont'd T065)

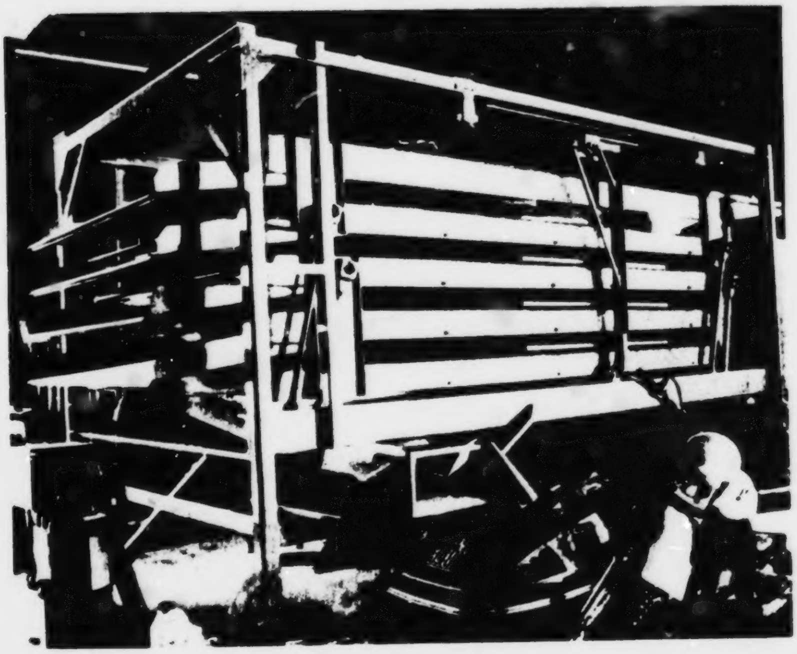
Work has begun on these test plots with part of the land being mobile plowed and the other part being chisel plowed. The different sub plots are:

1) Buckwheat
2) Rye Grass
3) Japanese Millet
4) Russet Burbanks
5) Crimson Clover
6) Sweet Clover
7) Red Clover
8) Barley with a mixture of Clover
9) Barley-straight
10) Winter Rye

This year everything will be plowed under; next year potatoes will be planted on this land and they will be monitored for quality and yield.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Demonstration of Grading Line for Seed Potatoes



PROJECT AFA NUMBER: T066

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:

Yvon Ouellette
R. R. # 5
Grand Falls, N.B.
Phone: 473-1733

(cont'd T066)

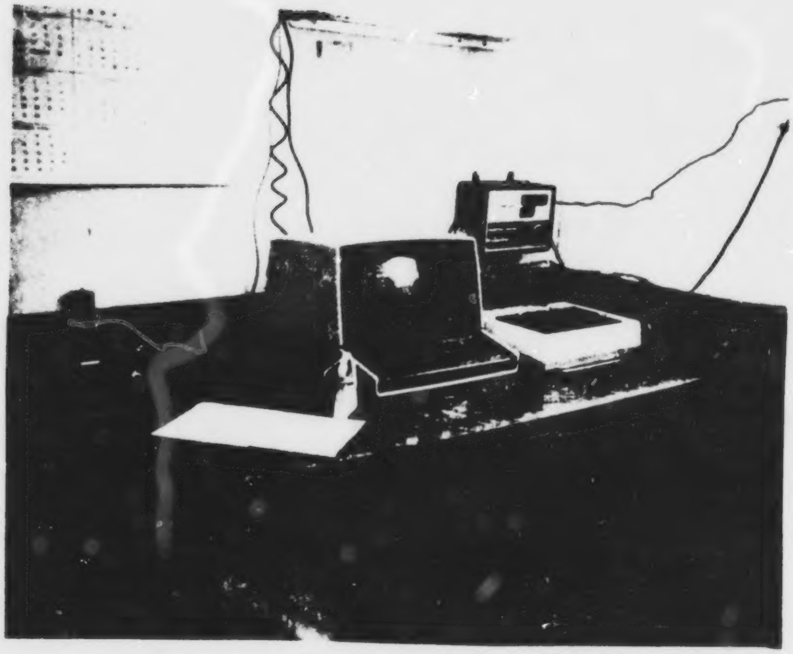
PROJECT COLLABORATOR:	L. Arsenault / G. Pelletier N.B. Department of Agriculture Phone: 473-5515
DATE APPROVED:	April, 1985
AGREEMENT FUNDING:	$38,918.
TOTAL PROJECT COST:	$64,864.
PROJECT OBJECTIVE:	To demonstrate a potato sizer for seed potatoes.

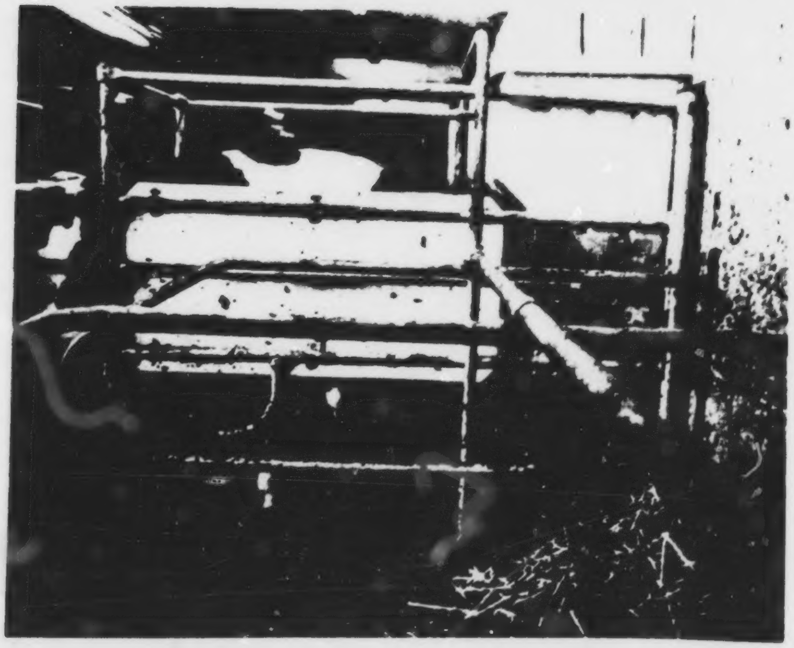
SUMMARY: Mr. Ouellette bought a Bijlsma Hercules Grader/Sizer Grading Line for his export potatoes. He grades the potatoes in three different sizes, but the system is capable of grading up to five different sizes. He is able to grade and size about 30 ton per hour.

This system consists of two baggers, a hopper, a table and the grading table. He has only had to make minor adjustments to the system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Surge Infarmation Feeding and Milk Monitoring System





(cont'd T073)

PROJECT AFA NUMBER: T073

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Gerald Culberson
R. R. # 6
Woodstock, N.B.
Phone: 328-6766

PROJECT COLLABORATOR:
David Taylor
N.B. Department of Agriculture
Phone: 473-2272

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $14,997.

TOTAL PROJECT COST: $51,908.

PROJECT OBJECTIVE: The objective of this project is to install a computerized feeding system which links directly to the milking system. This will decrease feed costs and increase milk production, thereby resulting in a lower cost of production.

SUMMARY: Mr. Culberson uses the Surge Infarmation Computerized Feeding System to feed about 57 dairy cows. This fully computerized system feeds the cows according to their individual lactation curve, adjusting itself automatically daily, for precise accurate feeding. All information is updated hourly, with no manual input, thereby reducing human error to zero. All the information about each cow is listed on the computer (for example when the cow was in heat, bred, and freshened). Also it has the cow's milk weights recorded daily.

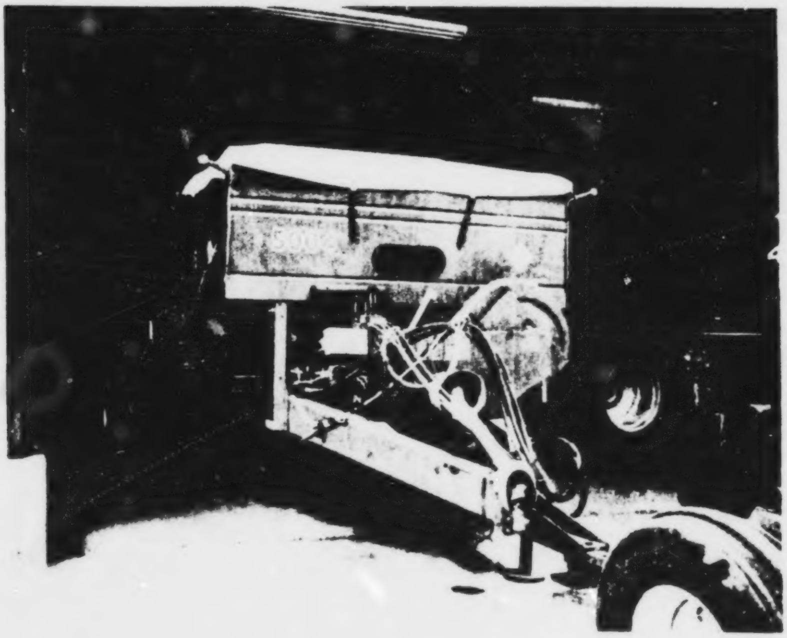
(cont'd T073)

Each cow has its own computerized tag, in the free-style barn. There are three stalls in the barn where the cow can walk in to be fed. A sensor in the stall can detect the tag on the cow, it automatically regulates the amount of feed that the cow can have. The feed drops into a feeder every twenty seconds so that the cow is not fed fast. This saves on feed; for example, if the cow decides that it has enough, it walks away and there is no excess feed left in the feeder. Also, if the cow stands in the stall eating longer than it is supposed to, the machine shuts off automatically and the cow can not get any more ration until it's next scheduled feeding. Each cow can be fed up to a maximum of 8 feedings daily, but usually eats no more than four to six times daily.

Mr. ulberson is pleased with the results of this system and has made only minor adjustments to it.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Demonstration and Evaluation of New Technique for Cereal Seeding



PROJECT AFA NUMBER: T076

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:

Reginald H. Dionne
R. R. # 2
Grand Falls, N.B.
Phone: 473-2314

(cont'd T076)

PROJECT COLLABORATOR: C. Everett / J. Damboise
N.B. Department of Agriculture
Phone: 453-2691 / 473-5515

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $14,175.

TOTAL PROJECT COST: $40,500.

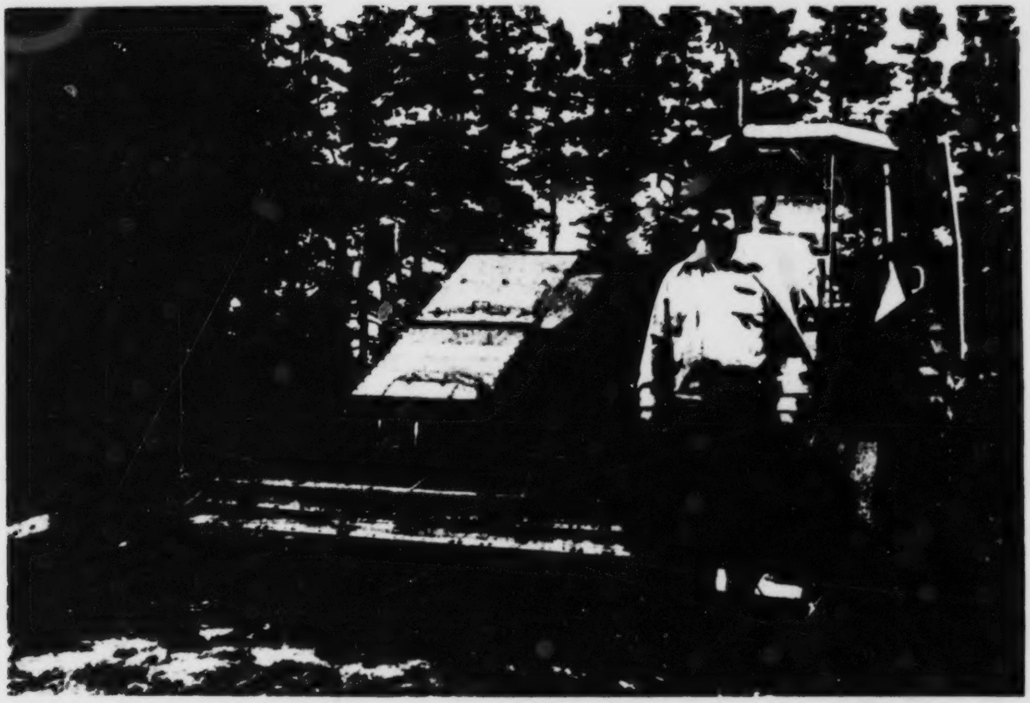
PROJECT OBJECTIVE: Demonstrate and evaluate a new technology in grain seeding, by the use of a pneumatic seed drill in comparison with a conventional grain drill.

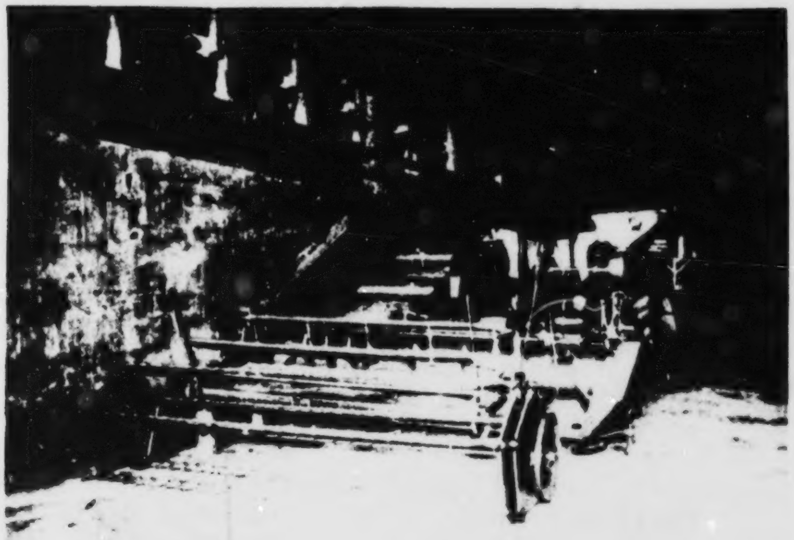
SUMMARY: Mr. Dionne bought a Tive Combi Jet 5004 pneumatic seed drill. The seed and fertilizer are fed to the drill jet coulters by an air flow, driven by the PTO. The drill jet coulters are equipped in a manner that each seed is placed at the same depth even under difficult sowing conditions and at high speed. The air type seeder is equipped with a fertilizer hopper and a forage seed hopper. The seeder has a 5000 litre hopper capacity with an adjustable divider wall between the seed and fertilizer compartment. If a grower wants to use more or less fertilizer or higher concentrated fertilizer, he can adjust the seed and fertilizer hopper in a manner that they will both flow at the same rate. The fertilizer is placed in the middle of alternate seed rows and 3 to 6 cm deeper than the seed. There is no contact of seed and fertilizer, thus, less chance of burning the seed. The fertilizer is placed in a position where the roots will be able to use it when required.

He felt that this machine did a better and more accurate job of seeding with no missing. This machine makes it easier to do a good job and cuts down on the usual amount of time in seeding.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Combine Harvester -
Grain, Soybeans, Grass Seed





(cont'd T079)

PROJECT AFA NUMBER: T079

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
E. Alan Dixon
R. R. # 2
Port Elgin, N.B.
Phone: 538-7615

PROJECT COLLABORATOR:
C. Everett
N.B. Department of Agriculture
Phone: 453-2691

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $14,403.

TOTAL PROJECT COST: $28,805.

PROJECT OBJECTIVE: To demonstrate the use of the J. F. Combine to small and medium grain farmers in N.B.

SUMMARY: Mr. Dixon used the J. F. Combine during the fall of 1985 to combine 60 acres of barley, 15 acres of oats, and 12 acres of wheat. Attachments included with the combine are a direct cut head, a swathing table, a mirror to be used with the tables, and an extra wheel for soft ground.

This combine is mounted on a 85 H.P. tractor and is equipped with a storage tank which can hold 1 ton of grain.

There are a lot of adjustments that need to be made to this combine. It requires a different chain drive and the belt must be adjusted. Last year he

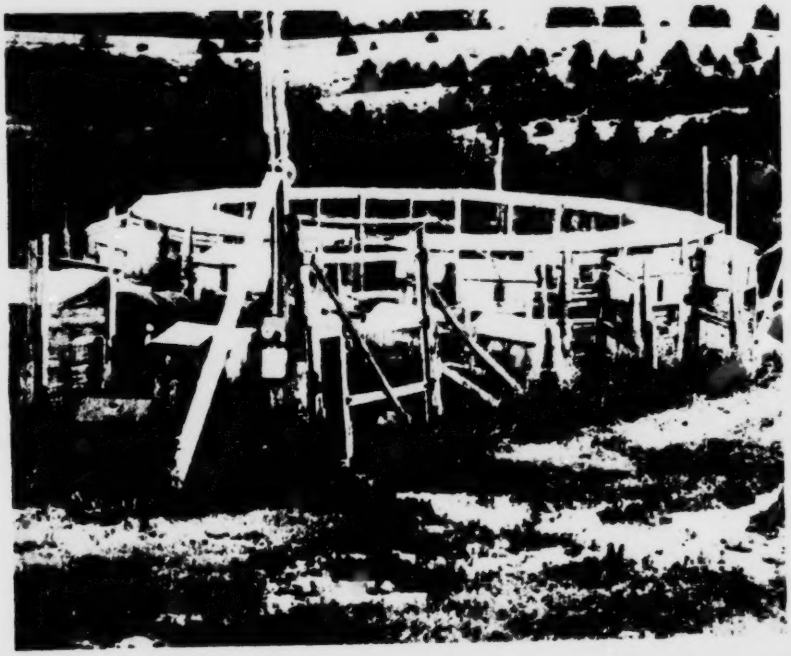
(cont'd T079)

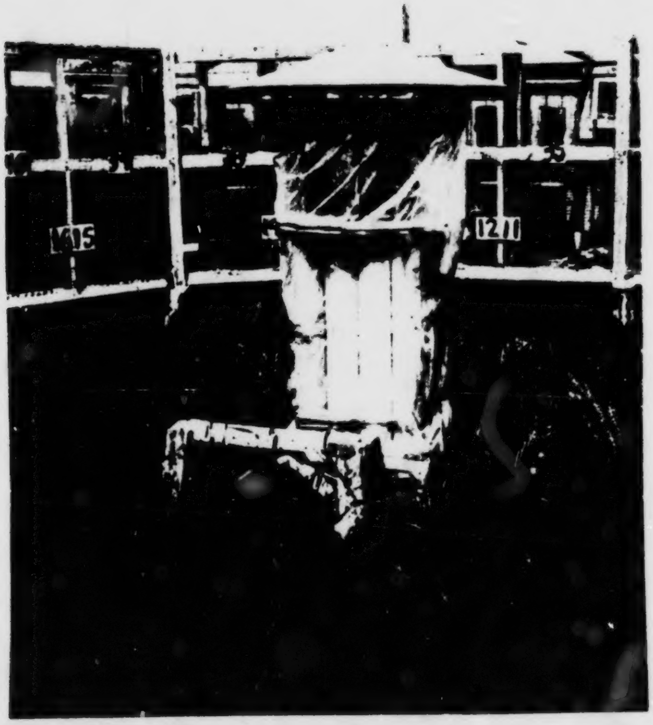
combined on the average 8 - 10 acres of grain before he had to replace the belt. This resulted in the replacement of four belts to complete his harvest.

This machine is also supposed to cut soybeans, but it has not been tried yet. Mr. Dixon is not impressed with the machine at this point but possibly after he has made several alterations, it will work more efficiently.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Fox Breeding Circle





(cont'd T085)

PROJECT AFA NUMBER:	T085
PROGRAM:	Livestock Industry Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Steeves Farms Ltd. c/o Roger W. Steeves P. O. Box 34 Elgin, N.B. Phone: 756-2627
PROJECT COLLABORATOR:	B. Trenholm N.B. Department of Agriculture Phone: 453-2457
DATE APPROVED:	April, 1985
AGREEMENT FUNDING:	$ 4,500.
TOTAL PROJECT COST:	$15,000.
PROJECT OBJECTIVE:	The object is to monitor a fox breeding circle with a closed circuit television camera.

SUMMARY: Roger Steeves designed his own fox breeding circle system and it was set up in the spring of 1985. The object of this project is to have a circle containing 48 breeding pens, 24 lower level, and 24 top level. It is monitored by a closed circuit television camera located in the centre of the circle.

This is an ITC Ikegami Monitoring System that is used in building security. It can be used during rain, snow, sun or darkness because the camera is enclosed in a glass house. Also, the camera can concentrate in one area, eliminating the waste of taping empty pens. The closed circuit television camera is set in the middle of the pens in an

(cont'd T085)

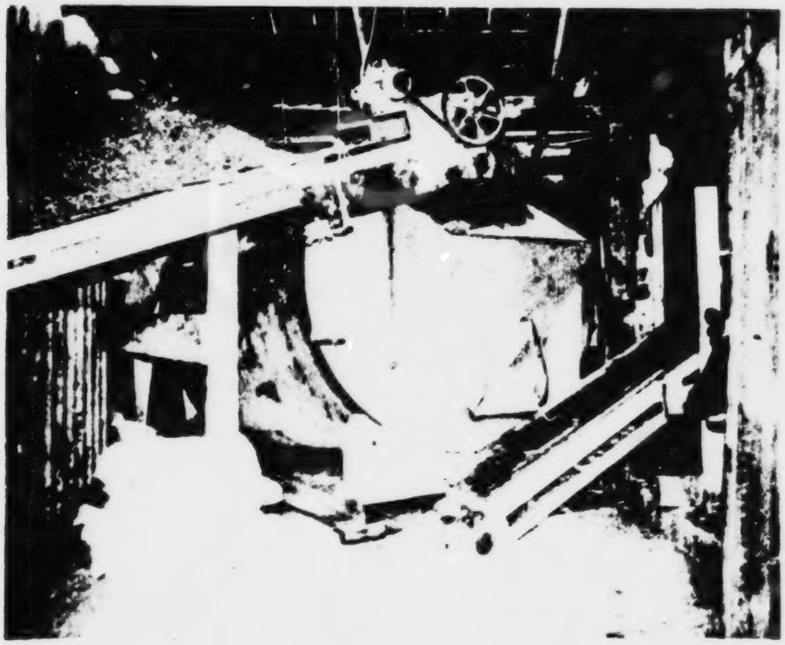
enclosed platform about 10 - 23 feet high. There is a small heater and vents that help maintain a correct temperature. A wide angle lens is used on the camera to monitor any action of the fox. Four pens can be viewed at one time and it completes the circuit in one and a half minutes. The tape can hold almost 7 hours of activity and it is used with a Beta VCR and viewed on a monitor screen.

This system eliminates the cost of a watch tower which is normally used to watch the fox during breeding time. It also saves on manpower because everything is taped.

Mr. Steeves is very pleased with this system and finds it very beneficial to his operation.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Frey Feed Drum Blender



PROJECT AFA NUMBER: 1086

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Jeorg Vonwaldow
R. R. # 2
Anagance, N.B.

(cont'd T086)

PROJECT COLLABORATOR: A. Saunders / D. Balzer
N.B. Department of Agriculture
Phone: 858-2552

DATE APPROVED: May, 1985

AGREEMENT FUNDING: $ 4,122.

TOTAL PROJECT COST: $10,305.

PROJECT OBJECTIVE: The objectives are to increase milk production by a more consistent total blend ration and a higher D. M. intake.

SUMMARY: The Frey Feed Drum was installed November of 1985. It holds about 1400 kilos of a total mix ration that consists of a mixture of alfalfa, brewers grain, minerals, dairy supplement, and vitamins.

Mr. Vonwaldow has a free stall barn and feeds about 60 milking cows. The barn is separated into different sections with different allotted areas for high and low milking cows, calves, and heifers. Each of these receives a different ration and are fed at different times. There are about 40 high producing cows which are fed five times daily and receive an extra supplement in their ration. About 20 low producing cows are fed three times daily and the calves are fed twice daily but receive only hay, calf starter and grower. The heifers are fed only once daily, with brewers grain and grass for their ration. All the milking herd and calves stay inside the barn winter and summer with only the dry cows going out to pasture.

The feed is pumped out by an auger onto a system of conveyors which are run overhead to take the ration to the different sections of the free stall barn. This system has improved the feed because before the Frey Feed Drum was used, it was all mixed by hand; therefore, it was not mixed as well. The cows can now maintain their milk production for a longer length of time. Mr. Vonwaldow is pleased with this system, and has had no major problems with it.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: AI in Foxes

PROJECT AFA NUMBER: T088

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Hector J. Gallant
R. R. # 2
Moncton, N. B.
Phone: 386-6669

PROJECT COLLABORATOR: A. Saindon
N.B. Department of Agriculture
Phone: 858-2555

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $ 4,200.

TOTAL PROJECT COST: $ 6,000.

PROJECT OBJECTIVE: By using AI in foxes, operating costs can be greatly reduced. One male can service 25 females versus 3 females natural mating.

SUMMARY: Artificial insemination of foxes has been done and proven effective in Europe. Mr. Gallant is the first to try AI in New Brunswick and bred 42 female foxes by this method.

He had no problem with the AI system but was not able to use it on all foxes since the aid of a veterinarian is required, but was not always available during the breeding season.

Mr. Gallant is pleased with his AI operation and finds it to be a real improvement in fox breeding.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Demonstration and Evaluation of Cereal Production Techniques

PROJECT AFA NUMBER: T102

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Jerome Damboise
N.B.D.A.
Grand Falls, N.B.
Phone: 473-5515

PROJECT COLLABORATOR:
D. Walker
N.B. Department of Agriculture
Phone: 453-2172

DATE APPROVED: April, 1985

AGREEMENT FUNDING: $ 3,410.

TOTAL PROJECT COST: $ 3,410.

PROJECT OBJECTIVE:

1) To demonstrate and investigate the advantages and disadvantages of two grain harvesting methods: direct swathing and direct combining. Evaluate the timeliness of swathing operation.

2) To demonstrate the use of poultry manure (laying hens) as the main source for cereal production. Demonstrate and evaluate timing of manure application. Demonstrate to producers that manure produced on farm should be considered as an asset instead of a waste. Compare production cost with conventional fertilizer applications.

(cont'd T102)

SUMMARY: In 1985 the demonstration and investigation of the timeliness of swathing operation was done in St. Quentin on about 10 acres of barley. The grain was swathed at three different lengths: 1) 30-35 cm, 2) 25 cm, and 3) 16 cm just before harvesting. Also direct combining was done. The data on the grain at 25 cm was lost because the scales were not properly set. It was determined that direct combining was the best method of harvesting, second best was swathing at 30-35 cm, and the worst method was swathing at 16 cm that is just before actual harvesting.

This year (1986), a demonstration of poultry manure has begun on about 10-12 acres of land in the St. Jacques area. The object is to replace nitrogen into the land through the use of poultry manure. There are four sub-plots being demonstrated: on the first sub-plot, 100% of the nitrogen (manure) was replaced in the fall; on the second sub-plot, 100% nitrogen was replaced in the spring of this year; on the third, only 50% of the nitrogen was replaced last fall; and on the last sub-plot there was no manure added, only fertilizer. There was a slight mix-up with this project; too much nitrogen and phosphorus was added but exactly the right amount of potash was applied to the sub-plots. The growth regulator was applied to this project, but it was not originally part of the plans. Other than the slight mix-up in applying too much nitrogen and phosphorous, everything is going as scheduled.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Computerized Egg Counter

PROJECT AFA NUMBER: T117

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology demonstration

PROJECT ORIGINATOR:
Riverview Poultry Farms Ltd.
Donald & Randolf Hicks
R. R. # 2
Campbellton, N.B.
Phone: 753-3736

PROJECT COLLABORATOR:
I. Breau
N.B. Department of Agriculture
Phone: 684-4253

DATE APPROVED: May, 1986

AGREEMENT FUNDING: $ 4,606.

TOTAL PROJECT COST: $ 6,580.

PROJECT OBJECTIVE: A computerized egg counting system capable of counting eggs per row per given time. Also, this system is capable of having other systems added to it. With this information, the producer can spot trouble as it happens such as blocked water line, feed consumption down, temperature change, etc.

SUMMARY: Riverview Poultry Farms Ltd. purchased a Poultry Management System computerized egg counting unit capable of handling 2 rows of caged birds. As the egg goes by an electric eye, it is automatically and instantly recorded onto the computer.

(cont'd T117)

This system allows for breakdown problems to be detected quicker because when the number of eggs are down from the usual count it indicates that there is a problem in that specific row.

Mr. Hicks is pleased with the system and finds it beneficial in detecting problems early.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Automatic Seeder - Flat Filler (under T223)
PROJECT AFA NUMBER:	T139
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Lloyd A. Brown Brookdale Nurseries Ltd. P. O. Box 422 Newcastle, N.B. Phone: 622-3424
PROJECT COLLABORATOR:	A. Currie N.B. Department of Agriculture Phone: 453-2108
AGREEMENT FUNDING:	$ 2,222.50
TOTAL PROJECT COST:	$ 4,445.00
PROJECT OBJECTIVE:	To purchase a mini-flat filler.

SUMMARY: The Bouldin Lawson Inc.- Mini Flat Filler is used to fill the trays with a Hecon - Plug mix peat moss. A small hopper is filled with the peat moss which supplies the machine to fill the trays. The trays are run through the system and come out the other end of the machine, levelled off and ready to be used for planting seeds that are done with the plug-seeder.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Natural Ventilation System

PROJECT AFA NUMBER: T153

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Murray Corey (B & M Farms)
R. R. # 1
Millville, N.B.
Phone: 463-2695

PROJECT COLLABORATOR: W. Durant
N.B. Department of Agriculture
Phone: 453-2691

DATE APPROVED: June, 1985

AGREEMENT FUNDING: $ 5,366.

TOTAL PROJECT COST: $10,732.

PROJECT OBJECTIVE: To install and use a natural ventilation system in a hog finishing barn (newly constructed).

SUMMARY: Murray Corey installed a natural ventilation system in his hog finishing barn. Natural ventilation operates on a single 1 H.P. compressor which drives pneumatic cylinders to open and close both the roof ridge vent and the wall vents. Due to fewer moving parts with this equipment, there are far less maintenance costs than conventional exhaust fans.

This system is less critical during power failure because all vents remain in a stable setting when the power is off. There is no interruption in the ventilation and hence, no danger to the hogs from suffocation.

(cont'd T153)

During the summer most hog barns are often 20 degrees higher than outside air and during this period feed intake is reduced and growth slows down dramatically. Natural ventilation allows outside air to flow through in a volume sufficient to achieve ambiant temperature thus greatly improving the environment for the hogs.

Natural ventilation tends to change the air much more frequently resulting in better overall air quality and hence better growth performance. The heat of the pigs constantly pushes the exhaust air through the roof ridge vents, as fresh air comes through the wall vents.

The only problem with this system is during the winter. Although the vents are closed, there is still cold air entering the barn causing the barn to be too cold. This problem will be closely examined this winter to try to correct the situation.

Mr. Corey is pleased with the system and recommends it to other hog farmers for their finishing hogs.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: High Compaction Hay Baler

PROJECT AFA NUMBER: T161

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Co-op Atlantic
c/o Earl DeMerchant
123 Halifax St.
Moncton, N.B.
Phone: 858-6000

PROJECT COLLABORATOR:
C. Everett
N.B. Department of Agriculture
Phone: 453-2691

DATE APPROVED: June, 1985

AGREEMENT FUNDING: $34,000.

TOTAL PROJECT COST: $68,000.

PROJECT OBJECTIVE: To build and demonstrate an efficient hydraulic hay baler for rebaling traditional field bales into an acceptable high density package, in order to economically utilize transportation to Atlantic Canada and off-shore markets.

SUMMARY: The Val-Pac High Compaction Hay Baler is a custom built machine that can compact 2 - 3 conventional bales into one neat 28 inch bale package. The number of bales being compacted depends on the weight of the bale. The ideal weight for the compacted bale is in the 95 lb. range. The machine requires three persons to operate it efficiently.

(cont'd T161)

Although the operators are satisfied with the product, the machine requires additional improvements before it is made available to other shippers.

There is an unlimited world market for hay and presently shipments are being made to Newfoundland, the United Kingdom and Saudi Arabia.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Farm Pickup Load Recording

PROJECT AFA NUMBER: T167

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: N.B. Milk Marketing Board
P. O. Box 490
Sussex, N.B.

PROJECT COLLABORATOR: Fraser Murray
N.B. Department of Agriculture
Phone: 453-2214

DATE APPROVED: July, 1985

AGREEMENT FUNDING: $ 8,925.

TOTAL PROJECT COST: $10,500.

PROJECT OBJECTIVE: To automate the clerical recording involved in farm pickup recording by using hand held computers.

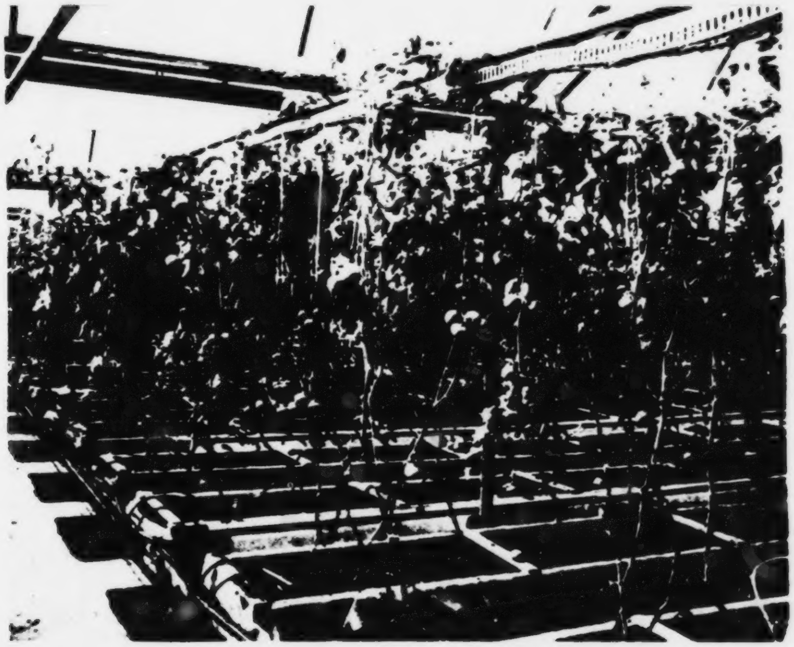
SUMMARY: The Norand Data Capture System is a hand held computer used by the driver to record milk pickups for each farm.

This system reduces labour and mix-up problems in losing slips and errors made in farm data. This system allows more accurate information to be received at each milk pickup, it contains a listing of all farm names which can be viewed on the computer when the licence number is entered.

Some training is required to operate the computer, but it is relatively simple to learn how to use. In the future every truck will have one of these hand held computers.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Greenhouse Tomato Variety Trial



(cont'd T193)

PROJECT AFA NUMBER:	T193
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Douglas Sanford Scott R. R. # 2 Salisbury, N.B. Phone: 372-9911
PROJECT COLLABORATOR:	A. Currie N.B. Department of Agriculture Phone: 453-2108
DATE APPROVED:	August, 1985
AGREEMENT FUNDING:	$ 5,600. (1985-1987)
TOTAL PROJECT COST:	$ 5,600. (1985-1987)
PROJECT OBJECTIVE:	This project involves the testing of a full term tomato crop, (spring and fall crop, 2 plantings) utilizing 6 varieties of the best yields grown in Ontario. Currently, most growers are still using Vendor which has been a standard for many years. This particular breed is not as productive as the newer varieties available. Selection of superior varieties will allow growers to obtain more productive yields.

SUMMARY: Ten varieties that were tested are: Vendor, Vendor VFT, Jumbo, Dombito, Vision, Buffalo, Perfecto, Laura, Dombello, and #617/83.

For experimental purposes the plants were mixed throughout the greenhouse to prevent one plant from having any type of advantage over another. Seeds were planted in pots between January 27 and February 6 and when the plants reached 3 inches in height, they were transplanted into 5 inch pots.

(cont'd T193)

The plants were electrically pollinated by a tomato pollinator operated with a 6-volt battery. The blossoms are pinched off when a cluster has more than 5 blossoms to allow for better tomatoes.

Fertilizer and nitrogen are continually being increased as the age of the plant increases. Leaf analysis was used to determine the fertilizer requirements throughout the growing period.

The variety Vision was the highest yielder with Vendor a close second even though it is the standard tomato plant that has been grown for years. Vendor also has the best flavour. The Laura variety is very susceptible to disease.

Mr. Scott plants a spring and fall variety crop and is able to have tomatoes ready for market between June and December. Mr. Scott is pleased with his tomato production and plans to stick with the Vendor variety as well as some of the newer varieties.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Storage Watch-Infra-Red Detection of Bacterial Soft Rot Breakdown

PROJECT AFA NUMBER:	T194
PROGRAM:	Potato Industry Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	John Walsh N.B.D.A. R. R. # 2 Florenceville, N.B. Phone: 392-6007

(cont'd T194)

PROJECT COLLABORATOR: G. Pelletier
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: August, 1985

AGREEMENT FUNDING: $ 4,500.

TOTAL PROJECT COST: $ 4,500.

PROJECT OBJECTIVE: The objective of this project is to increase grower awareness of the need for regular storage monitoring for bacterial soft rot and other breakdown organisms by initiating a program of storage checks with an infra-red temperature sensing device.

Ultimate object is to reduce the losses associated with bacterial soft rot.

SUMMARY: An infra-red temperature sensing gun, for early detection of bacterial soft rot breakdown, was purchased from Northwest Ag Consultants of Culver, Oregon in November of 1985.

Growers were advised of the program by mail. They were asked to phone for an appointment so that growers in the same area could be handled all in the same day. Every storage to be inspected was first mapped, then each bin divided into sections which were individually checked with the IR gun. For each section, readings of average temperature, maximum temperature, minimum temperature and total spread were recorded. The IR gun made it possible to evaluate an average sized storage in about 45 minutes. A three degree differential was decided upon as a flag to repeat the readings and try to pinpoint the "Hot Spot".

(cont'd T194)

A total of 41 growers took advantage of "Storage Watch" between November 11, 1985 and March 31, 1986. In some cases a grower was visited more than once, making the actual number of visits 56. Many growers had more than one facility, making the total number of storages checked 71.

Each grower visited was advised of the condition of his crop. In the majority of cases there was no problem. Six growers had serious problems and if they did not have a ventilation system (which was usually the case), they were advised to place a fan over the "Hot Spot" so that it would draw up from the floor through the affected area. In two of those cases, there was not enough time to save the crop. In the remaining cases, early detection of a problem probably saved potatoes.

Aside from the breakdown problems, Storage Watch proved to be a revelation in other ways. One of the most common observations made was that in unventilated storages, the top of the pile could be as much as 10° F warmer than the bottom. Many growers assumed that the temperature indicated on thermometer at the front of the storage was valid for the entire pile. This program, it seems, will promote ventilation more than anything done before.

"Storage Watch" has already become one of the most successful aspects of the province's Potato Storage Management Program.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Grain Dryer, Soyabean Cooker

PROJECT AFA NUMBER: T196

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Stephen Moffett Ltd.
Penobsquis, N.B.
Phone: 433-4692

PROJECT COLLABORATOR: M. Snodden
N.B. Department of Agriculture
Phone: 453-2457

DATE APPROVED: August, 1985

AGREEMENT FUNDING: $ 6,250.

TOTAL PROJECT COST: $25,000.

PROJECT OBJECTIVE: Purchase of a circulating dryer to dry 300 acres of grain currently in production. We purchased 300 tonnes of locally grown grain which we would dry down. Also, soyabeans when cooked are a high energy and protein additive suitable for hog finishing.

SUMMARY: The machine was purchased in 1985 and was used to cook soyabeans purchased from P.E.I. The unit performs well.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Val Floor Watering Systems

PROJECT AFA NUMBER: T197

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Jean Jacques Bouchard
St. Francois, N.B.
Phone: 992-2748

PROJECT COLLABORATOR: J. Rutanga
N.B. Department of Agriculture
Phone: 739-9545

DATE APPROVED: August, 1985

AGREEMENT FUNDING: $ 2,918.

TOTAL PROJECT COST: $ 6,486.

PROJECT OBJECTIVE: Demonstration of the performance of the Val Floor Watering System.

SUMMARY: Jean Bouchard installed the Val Floor Watering System in five of his brooder houses. Each brooder house has two floors and each floor houses about 8,000 chicks.

This system consists of a feeder pipe located five inches from the floor, equipped with a nipple every four inches. The chick touches the nipple with its beak and drops of water come out. The system runs the length of the house and is fed from an underground storage tank. This system promotes better water quality, with fresh water being used at room temperature and it is self-cleaning.

Mr. Bouchard is pleased with this system and feels that it works "A-1" and has had no problems with it.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Microprocessor Based Ventilation

PROJECT AFA NUMBER: T202

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Martinuj Van Cingel
R. R. # 2
Upper Kent, N. B.
Phone: 276-5569

PROJECT COLLABORATOR: John Walsh
N.B. Department of Agriculture
Phone: 392-6007

DATE APPROVED: August, 1985

AGREEMENT FUNDING: $ 8,750.

TOTAL PROJECT COST: $17,500.

PROJECT OBJECTIVE: To introduce microprocessor based technology for ventilation systems to New Brunswick potato growers and to further promote the concept of multi-bin potato storages.

SUMMARY: Storage management is one aspect of potato production in New Brunswick that has lagged behind other parts of the world. In the processing sector, where there is a demand for quality and specific storage requirements for the crop, there is a need for more sophisticated storage systems.

One of the major costs of a new storage is ventilation. Initially, the ventilation cost for a multi-bin storage was equivalent to that of a

(cont'd T202)

single bin storage since an individual control panel was needed for each bin. The microprocessor reduces this expense. Whereas a typical control panel can cost anywhere from $2,000 - $6,000, the eight channel microprocessor, capable of handling eight bins, retails for approximately $10,000. Programming is extra but once done for the first unit, it is no longer a factor. Thus, as the number of bins increases, the microprocessor becomes cheaper on a bin to bin basis. Typical of the computer industry as a whole, the price of these units is expected to drop in the future.

With this system, the temperature for each bin can be set separately depending on the different needs of the bin.

Mr. Van Cingel has had only minor adjustment in setting up the system. With the Microprocessor Ventilation System, it allows him to store the potatoes late into the spring. He is pleased with the results of using this system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Chore-Time Brood-Grow Cage System

PROJECT AFA NUMBER: T204

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Sprague Farms Ltd.
Mack Sprague
R. R. # 4
Millville, N.B.
Phone: 463-2716

PROJECT COLLABORATOR: D. Ramey
N.B. Department of Agriculture
Phone: 453-2517

DATE APPROVED: September, 1985

AGREEMENT FUNDING: $ 2,000.

TOTAL PROJECT COST: $ 5,300.

PROJECT OBJECTIVE: Growing of commercial broilers in Americal cages to determine the suitability of growing broiler chicks in a cage system which has traditionally been used to grow layer pullets.

Trial No. 1 - Will determine if there is a difference between the cage tiers.

Trial No. 2 - Will determine if there is a difference between the number of broilers started per cage.

Trial No. 3 - Will determine the most advantageous time to move broilers to the floor system.

(cont'd T204)

SUMMARY: A single tier of Chore-Time cage (brood-grow) was suspended from the ceiling within the pen of the broiler house. Eight individual sections were used to house four duplicate concentrations of 25, 50, 75 and 100 day-old broiler chicks per cage.

At fourteen days, the broilers were moved to a floor pen at the N.B. Poultry Test Station. At shipping time, each individual weight was recorded and each broiler was assessed for breast deformity, cysts, blisters and fleshing.

Mortality was recorded throughout the tests. During the first eleven days, mortality was directly related to the concentration per cage. The highest mortality occurred in the 100 bird per cage, the next highest in the 75 bird per cage, etc. This pattern continued through to the market age.

A numerical difference in weight was noted as well. At market time a significant difference was noted between broilers housed initially at 25 per cage and the other three concentrations. The largest weight was noted in the low cage concentration.

Grades assessment also shows the least amount of B's and utility from the 25 concentration.

It would appear that the optimum number of broiler chicks is between 25 and 50.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Equalizer-Martin Manure Loader
PROJECT AFA NUMBER:	T207
PROGRAM:	Livestock Industry Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Daryl Walker Longsview Farm Ltd. R. R. # 5 Sussex, N.B. Phone: 433-1301
PROJECT COLLABORATOR:	L. Folkins N.B. Department of Agricultue Phone: 433-3073
DATE APPROVED:	October, 1986
AGREEMENT FUNDING:	$ 4,994.
TOTAL PROJECT COST:	$ 9,989.
PROJECT OBJECTIVE:	To handle all types of manure from solid to liquid in a more efficient manner by using the Equalizer-Martin Manure Loader.

SUMMARY: Presently Longsview Farm have a Nesseth Manure Pump but it is necessary to haul water to the lagoon and agitate prior to pumping in order for the system work.

The Equalizer-Martin Manure Loader will handle all types of manure from solid to liquid and is much more efficient than a pump.

(cont'd T207)

The machine is portable and has direct PTO hook-up which will operate up to 540 R.P.M. It has a 22 foot chute with 12" auger and a 28" loading blade that can break up crusts and scoop liquid. The storage lagoon has a cement floor which is a requirement for this type of unit.

Mr. Walker is pleased with the way that it operates.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Sealed Storage Feed Equipment

(cont'd T214)

PROJECT AFA NUMBER: T214

PROGRAM: Livestock Feed Demonstration

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Robert D. Parkinson
R. R. # 3
Woodstock, N.B.
Phone: 328-8238

PROJECT COLLABORATOR: Peter K. Scott
N.B. Department of Agriculture
Phone: 392-6007

DATE APPROVED: October, 1985

AGREEMENT FUNDING: $12,500.

TOTAL PROJECT COST: $25,000.

PROJECT OBJECTIVE: This project will demonstrate the use of equipment capable of storing any silage product in an environmental resistant plastic wrapping. It will evaluate quality of material at time of storage and feeding, plus production capabilities. It is intended to evaluate this method of feed storage compared to other storage systems, i.e. upright silo or bunker silo, presenting an alternative storage system at less cost.

SUMMARY: The Ag-Bag System is the only system that provides instant compaction of materials, leaving enough oxygen present to start proper fermentation, and it maintains an oxygen free environment by use of the sealed plastic bag as a storage facility.

(cont'd T214)

The Ag-Bag System eliminates the possibility of overwilting, rain damage, and shattering experienced in handling hay/grass crops. The AG-Bag System is the only product on the market that allows ensiling of forages within a matter of several hours after cutting at recommended high moisture levels, (60 - 70%).

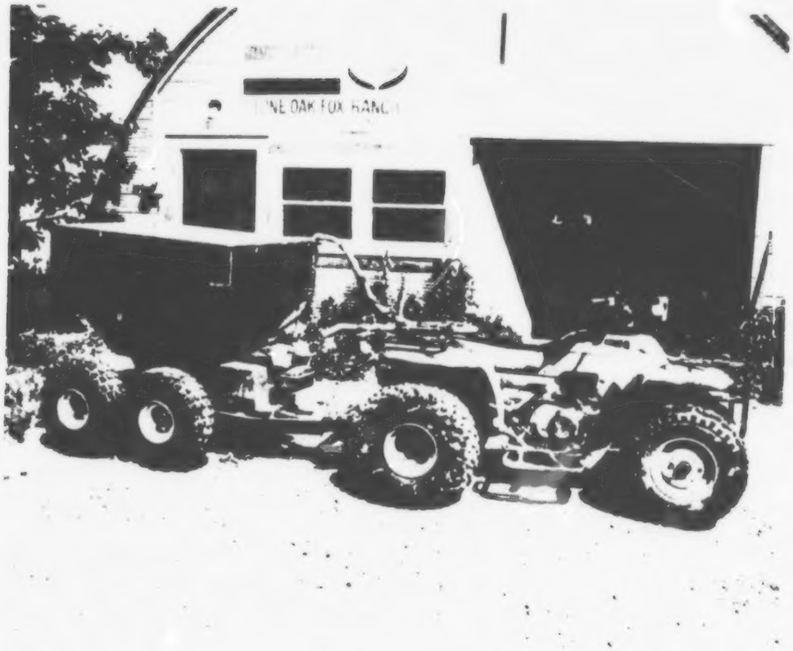
The farmer may store either a frosted crop or a drought stricken crop with the Aq-Bag System, providing the means of saving what otherwise would have been a serious loss. A variety of feeds and grains may be stored in bags, making it possible to blend and balance feed rations.

Mr. Parkinson is pleased with the results of this project. He feels that the quality of the alfalfa silage that he is presently using could be improved by setting the plastic bags on a concrete platform. This would prevent the ground from being chewed up during the removal of the silage from the bags with an SS loader.

The Ag-Bag System is flexible and portable offering unlimited storage capacity. The plastic bags may be placed in convenient and various locations on the ground as required by farm operation. The plastic bags are 125 feet long, 9 feet wide and hold about 130 ton. The negative aspect of this operation is that the bags cost $450 and can be used only once, yet this is cheaper than building an additional silo to store the amount of silage that his farm operation requires. Mr. Parkinson has decided to try something new this winter. He is going to use the silage in his silo first, then he is going to refill his silo partially with one of the bags, this will make it easier than feeding the silage with the SS loader. It takes about three of these bags to completely fill his silo.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Automatic Fox Feeding Cart



PROJECT AFA NUMBER: T222

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Joseph Poitras
R. R. # 2
Salisbury, N.B.
Phone: 372-9157

(cont'd T222)

PROJECT COLLABORATOR: B. Trenholm
N.B. Department of Agriculture
Phone: 372-9157

DATE APPROVED: November, 1985

AGREEMENT FUNDING: $ 2,375.

TOTAL PROJECT COST: $ 4,500.

PROJECT OBJECTIVE: To construct a non self-propelled automatic feed cart and demonstrate its effectiveness on a fox farm.

SUMMARY: An automatic feed car for feeding foxes was designed through a group effort and constructed at Arsenault Machine Shop in Cap-Pele.

It is a stainless steel hopper that does not rust and therefore will not contaminate the feed. It holds 1500 lbs. of feed, enough to feed the entire fox ranch of about 1000 foxes with one load. There are two augers in the bottom of the hopper and the feed is pumped out with a hose system run by a 5 H.P. gasoline motor. The cart is pulled by a four-wheeler, enabling the foxes to be fed automatically without the operator leaving the four-wheeler.

The fox feed is a mixture of ground beef, chicken, fish, and grain. They are fed once during the day, six days a week.

This system greatly reduced the feeding time from the original three hours to about half an hour. It also eliminates a lot of stress in the foxes, because when feeding begins, a fox will get excited and start fighting over who is to be fed first. It also eliminates startling the foxes as the noise of the four wheeler will alert them that something is coming. This system can also be used for watering foxes.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Articop for Artificial Insemination

PROJECT AFA NUMBER: T220

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Vital Thebeau
P.O. Box 517
Nackawic, N.B.
Phone: 575-8984

PROJECT COLLABORATOR: B. Trenholm / F. Fieldman
N.B. Department of Agriculture
Phone: 453-2457

AGREEMENT FUNDING: $ 1,645.

TOTAL PROJECT COST: $ 2,350.

PROJECT OBJECTIVE: To demonstrate the use of the Articop A.I. instrument and the new Norwegian heat meter with foxes that have been conditioned from birth for A.I. procedures.

SUMMARY: This activity involves using A.I. procedures for foxes. Several foxes, male and female were conditioned from birth for artificial insemination procedures during the 1985 and 1986 breeding season.

The equipment used for this project included: the Artificial Copulating device (Articop instrument), Rutgage (heat meter), microscope, semen extender, syringes, funnels, tubes and instructions. These were purchased from Finland.

(cont'd T220)

A room is presently being constructed to serve as a laboratory which will be fully equipped for collecting semen and inseminating foxes.

Semen was successfully collected from three male foxes using the digital manipulation method and 9 female foxes were artificially inseminated using the Articop instrument.

The A.I. system has many benefits including fewer males being required which will reduce the feed cost. An original ratio of 3:1 female to male was required for breeding but this has been reduced to about 20:1 ratio of female to male. This method will improve the quality of fox produced because of selective mating. Through natural breeding this is not possible due to refusal of certain animals to breed. It will also enable faster production of new crossed colors which are time consuming, difficult to produce and expensive to acquire.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Clod Separator

PROJECT AFA NUMBER: T226

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Paul E. Bubar
R. R. # 3
Hartland, N.B.
Phone: 375-4531

PROJECT COLLABORATOR: C. Everett / G. Misener
N.B. Dept. of Agric. / Ag Canada
Phone: 453-2691 / 452-3260

AGREEMENT FUNDING: $ 7,000.

TOTAL PROJECT COST: $10,000.

PROJECT OBJECTIVE: This machine is designed for clods. Rocks and potatoes are separated by bouncing the potatoes off two large steel rollers. The objective of this project is to see if it will work and how much bruising occurs.

SUMMARY: This machine, a product from Juran Metal Works Ltd. (made in Israel), was used for only a few hours. It was not a feasible product because it caused too much shatter bruise. Mr. Bubar was not pleased with the machine and does not recommend it. He felt that possibly if the potatoes were warmer then it would reduce potato bruising. With his type of operation it is not possible to keep the potatoes at a warm enough temperature to allow for the usage of the machine.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Demonstration of a Bin Piler, Space Finder, Model 800

PROJECT AFA NUMBER: T236

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Jean Marc Godbout
R. R. # 5
Grand Falls, N.B.
Phone: 473-3686

PROJECT COLLABORATOR:
L. Arsenault
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: March, 1986

AGREEMENT FUNDING: $ 9,000.

TOTAL PROJECT COST: $22,500.

PROJECT OBJECTIVE: The object of this project is to buy and demonstrate a telescopic bin piler by Bijlsma Hercules in Holland.

SUMMARY: Mr. Godbout purchased the telescopic bin piler, space finder design, in the spring of 1986. This bin piler is a great improvement over the older bin pilers, with many extra features which make work a great deal easier.

This system can be run automatically or manually with a control panel that is attached to the bin piler or removed and can be used while loading or unloading from the truck with a 50 foot cord. The

(cont'd T236)

bin piler is completely electric with a minimal amount of noise. The system is completely designed to reduce bruising potatoes while they are being handled.

This space finder design, with a drop of height of only 1200 mm, eliminates the need for an additional elevator. The maximum reach in front of the wheels and the swinging reach of 16000 mm make this space finder suitable for a large variety of tasks. In retracted position the machine is only 7250 mm long. The rubber belt is 650 mm wide, curved and all in one piece, the troughed form ensures a high capacity and prevents run-back of potatoes. There is no drop between input and output end of the machine to avoid damage to the potatoes. The machine is top driven which guarantees a positive drive. The swinging cycle incorporates an idling sequence to ensure complete and even filling of the boxes, especially in the box wall area. The duration of the idling period is variable, so that boxes will be evenly and completely filled from wall to wall without intervention from the operator. As the machine remains static while the conveyor is swinging, damage to the potatoes is virtually impossible. The telescopic conveyor is provided with a luffing head at the delivery end. Extending and retracting and also height adjustment is by electrical means. The steering wheel is provided with an electrical motor to provide easy moving of the bin piler. There are four motors in all with this system.

Parts are readily available and any work that has to be done on the control panel can be done by almost any electrician.

Mr. Godbout is pleased with this system and has had no problems with it. He feels that this will make handling of the potatoes easier with a lot less bruising. Also, he feels that this could be used to handle grain since there are no holes in the belt.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Udder Health Program

PROJECT AFA NUMBER: T237-1

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: N.B. Milk Marketing Board
c/o Ralph St. J. Freeze

PROJECT COLLABORATOR: L. Folkins
N.B. Department of Agriculture
Phone: 433-3073

DATE APPROVED: December, 1985

AGREEMENT FUNDING: $ 6,000.

TOTAL PROJECT COST: $ 6,000.

PROJECT OBJECTIVE: To hire and train a person to provide an independent evaluation of milking equipment, environmental factors, and milking procedures for New Brunswick milk producers. To obtain the necessary equipment to take accurate measurements and make recommendations based on scientific evaluations.

SUMMARY: The overall objective is to develop and implement an Udder Health Program. Included under the main objective is (1) the adoption of modern production and management practices by milk producers with regard to udder health. The use of accurate devices to measure imbalances in milking equipment and the milking environment would be an advancement to the available technology; (2) the recommendations made by the Udder Health Technician

(cont'd T237-1)

would lead to improved management skills; (3) the lowering of mastitis occurrences and somatic cell counts would improve the quality of milk, which would enhance promotion and market development activities.

The goal is to provide an independent evaluation of the factors which affect udder health. The technician would provide a thorough appraisal of milking procedures including sanitation, udder preparation, timing of milker attachment, noise in the barn and cow behavior. A detailed check for stray voltage would be conducted. The milking equipment would be inspected and undergo various tests and measurements on the pump, regulator, size and slope of pipe, pulsators, hoses, inflations and tests for pressure and pump capacity. Experience in other milk-producing areas reveals that most equipment being used is suitable when observed as separate components but, as an overall system, many are unbalanced. This may lead to severe problems due to vacuum fluctuation, inadequate washing and sanitizing or the use of too many milking units on a system. The proposed program will address the milking system as a complete, balanced system.

Three trial runs have been done, the program is now ready to operate full-time throughout New Brunswick.

PRODUCER SERVICES

UDDER HEALTH

Somatic cell counts in milk are a good indication of the general state of udder health. A logical goal for a well-managed dairy herd is to maintain a bulk tank count consistently below 200,000 cells per millilitre.

Research on 9,400 cows from DHI herds in Ontario shows that a herd of 40 cows having somatic cell counts of 400,000 is losing $3,250 per year as compared to a herd at 200,000 SCC. This figure is based on a milk value of $45/hl. (NOTE: this does not mean that the milk production loss at 200,000 is insignificant.) A method for estimating losses due to subclinical mastitis has been established by Dr. Dohoo of Agriculture Canada. Using individual somatic cell counts on an actual herd of 72 milking cows, the daily loss equated to 61.2 litres or, at $45 per hectolitre, $27.54 loss per day. On a yearly basis, this means 22,338 litres loss, or $10,052 at $45/hl.

Going from 500,000 to 100,000 SCC, the production level can be increased from 6,800 Kg/cow to 7,300 Kg/cow. For a 50-cow herd, this is an extra 25,000 Kgs of milk, resulting in $10,912 additional income at a milk price of $45/hl.

During the 1984/85 dairy year in New Brunswick, 37% of the producers (189) averaged 200,000 or less on SCC. The remaining 63% of farms averaged a SCC of 356,500 on the production of 79,610,427 litres (63.2% of N.B. total). See Page 4 for a province-wide breakdown. Using the bulk tank count to estimate losses from having SCC over 200,000, those 320 farms are losing 18,690 hl of milk, which equates to **$741,999** at a milk price of $45/hl.

OMMB's Udder Health Management Program

The Ontario program has been operating since April 1982. The main reasons for producers using the service are as follows: (1) to have the milking equipment checked; (2) reduce somatic cell counts; (3) reduce clinical mastitis; (4) to have an independent evaluation; (5) to have an annual preventative check. These were tabulated from evaluation of service cards filled out by producers using the service.

Comments from producers include, "Every dairyman should participate in this valuable program," "an excellent service," and "money is well spent". Those using the service have been pleased and supportive as can be seen by the number of returns calls:

April 1983 to March 1984 -- 31% of all visits were return calls;

April 1984 to March 1985 -- 44% of all visits were return calls.

Some farms have been visited 6 times since April 1984!

Results of UHMP

Farms which take advice and follow recommended mastitis control procedures have a very high chance of maintaining a low somatic cell count. Dry cow thereapy can be omitted on some farms with no detrimental effects on somatic cell count.

Ontario's SCC for all dairy farms for 1983 was 411,000; in 1984 it had decreased to a 6-month average of 337,000, a 20% decrease!

IMPACT OF UHMP ON EQUIPMENT AND SUPPLIES INDUSTRIES

Boumatic	- introduce a different shaped claw due to the old model causing cyclic vacuum fluctuation.
Alfa Laval	- introduced a new component to their Duo-Vacs (sensing device) as the old model restricted air flow such that vacuum at teat end dropped, causing slow milk out and liner slips.
Surge	- have been concerned about OMMB technicians' comments on their regulators; it is believed that they are now developing a servo-diaphragm regulator which has been proven to be far superior.
Hibitane	- OMMB technicians found that their teat dip dried out teats and caused chapping; the company (Ayerst) added more teat softeners and the results have been very good.

This all adds up to benefits for the producers, manufacturers and retailers by improving product quality.

SMMB'S MILKING MACHINE TEST AND REPAIR SERVICE

The Scottish Milk Marketing Board offers a Milking Machine Test and Repair Service to its producers. Over 60% of all producers use the service. Some producers have their farm visited at 6-month intervals. One of the reasons for the high rate of participation is the producers' preference to deal with their own employees at the Board.

N.B. PRODUCERS 1984/85

	Somatic Cell Count		
Number of Farms	Greater than	Less than	Production
17	--	82,500	1,771,699
116	82,500	165,833	28,810,982
143	165,833	249,166	40,058,393
94	249,166	332,500	24,874,997
71	332,500	415,833	16,489,856
29	415,833	496,666	6,531,157
16	496,666	575,834	2,896,695
14	575,834	655,834	3,055,098
3	655,834	720,833	456,150
——	720,833	--	1,008,132
511			125,953,159

NOTE: These are bulk tank counts which do not contain the milk of cows treated for mastitis; therefore, these figures are lower than actual herd SCC.

37% of the producers were under 200,000 average during the 1984/85 dairy year;

54% of the producers were under 250,000 and this represents 56% of total production.

FROM INDIVIDUAL COW COUNTS
NUMBER OF COWS IN EACH OF THE
FOLLOWING CELL COUNT RANGES:

	% LOSS
0 TO 150,000	21 x 0 = 0
150,000 TO 250,000	15 x 1.5 = 22.5
250,000 TO 400,000	13 x 3.5 = 45.5
400,000 TO 1,100,000	14 x 7.5 = 105.0
1,100,000 TO 3,000,000	5 x 12.5 = 62.5
OVER 3,000,000	4 x 17.5 = 70.0
NUMBER OF COWS = 72	TOTAL = 305.5

AVERAGE LOSS = TOTAL % LOSS ÷ NUMBER OF COWS ÷ 100
AVERAGE LOSS = 305.5 ÷ 72 ÷ 100 = 0.04

TOTAL DAILY MILK LOSS = AVERAGE LOSS x MILK SHIPPED PER DAY
= 0.04 x 1530 = 61.2 LITRES

TOTAL DAILY $ LOSS = DAILY MILK ÷ 100 x PRICE ($/HL)
= 61.2 ÷ 100 x $45 = $27.54

FROM BULK TANK COUNTS

(BULK TANK COUNT - 200,000) ÷ 100,000 = NUMBER OF UNITS
(459,000 - 200,000) ÷ 100,000 = 2.59 UNITS

TOTAL DAILY MILK LOSS = UNITS x 1.5 ÷ 100 x MILK SHIPPED/DAY
= 2.59 x 1.5 ÷ 100 x 1530 = 59 LITRES

TOTAL DAILY $ LOSS = DAILY MILK LOSS ÷ 100 x PRICE ($/HL)
= 59 ÷ 100 x $45 = $26.55

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	To Buy and Demonstrate a Pulverizator Dubex Trailer Sprayer in the Province
PROJECT AFA NUMBER:	T239
PROGRAM:	Potato Industry Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Ronald & Louise Gagnon R. R. # 5 Grand Falls, N.B. Phone: 473-5343
PROJECT COLLABORATOR:	C. Everett / G. Pelletier N.B. Department of Agriculture Phone: 453-2691 / 473-5515
DATE APPROVED:	December, 1985
AGREEMENT FUNDING:	$14,700.
TOTAL PROJECT COST:	$21,000.
PROJECT OBJECTIVE:	To improve the application and the effectiveness of pesticides in potato cultivation and reduce soil compaction and to make easier the operation of using pesticides.
SUMMARY:	Mr. Gagnon just bought this piece of equipment and has only used it once as a trial run. He feels that it will do the type of job that it was bought for.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Microcomputer
PROJECT AFA NUMBER:	T249
PROGRAM:	Livestock Industry Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	N.B.D.A. St. Quentin District Box 428 Restigouche Co., N.B. Phone: 235-2683
PROJECT COLLABORATOR:	Y. Vaillancourt / P. Ouellette N.B. Department of Agriculture Phone: 235-2683 / 739-9545
DATE APPROVED:	January, 1986
AGREEMENT FUNDING:	$12,934.
TOTAL PROJECT COST:	$12,934.
PROJECT OBJECTIVE:	To purchase and use a Loren Bennett dairy ration package with the microcomputer.

SUMMARY: The Loren Bennett dairy ration package was purchased in early March. The installation of a microcomputer and implementation of a computerized Dairy Herd Health Program is for dairy farmers in the St. Quentin - Kedgwick area. The system consists of two software programs, one for reproduction and disease, the other for nutrition.

(cont'd T249)

The reproduction and disease program is used by the Veterinarian to record and maintain information on the herd, such as when the cow is in heat, when they are to be checked for pregnancy, breeding dates, when the calf is due, when they have had different vaccinations, etc.

The nutrition program is used to determine a balanced ration for individual farmers' herds. Feed samples of each different lot of grain, silage, and hay must be examined to determine the quality of their feed. The feed is then formulated specifically for the farmer to allow the herd to receive a balanced diet. All the information about the herd is keyed into the computer program and a ration is formulated on the average weight per cow.

Presently 6 - 7 farmers are using this method of determining a mixed ration for their cattle. In the future the system will be used by all of the dairy farmers in the area. There has been a good feedback from the farmers using the system. It has reduced feed bills, increased milk production, reduced medical attention for cattle, and basically a healthier herd is established.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Mobile Tray and Benching with Nutrient Film Technique
PROJECT AFA NUMBER:	T255
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Royal Gardens Ltd. Box 1188 Sussex, N.B. Phone: 433-2030
PROJECT COLLABORATOR:	B. Dykeman N.B. Department of Agriculture Phone: 453-2108
DATE APPROVED:	February, 1985
AGREEMENT FUNDING:	$ 31,686.
TOTAL PROJECT COST:	$126,745.
PROJECT OBJECTIVE:	To install mobile trays in 26,000 sq. ft. of a one acre greenhouse with nutrient film for irrigation and feeding.

SUMMARY: The primary objectives of this project are to produce more revenue and reduce costs in the greenhouse Pot Plant Operation. The mobile tray benching system with built in Nutrient Film Technique (NFT) irrigation systems will make the Pot Plant 92% space efficient, reduce heating, fertilizer and labour costs.

This project is expected to be completed by the end of August, 1986. About 6000 poinsetta plants will be grown on the mobile tray benching system.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Culture Hydroponique en Aquaculture (NFT) pour tomates en serres.

(cont'd T278)

PROJECT AFA NUMBER: T278

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Serres Thériault Ltée
c/o Sylvain Thériault
R. R. # 2
Grand Falls, N.B.
E0J 1M0
Phone: 553-6210

PROJECT COLLABORATOR:
A. Currie
N.B. Department of Agriculture
Phone: 453-2108

DATE APPROVED: March, 1986

AGREEMENT FUNDING: $ 9,842.

TOTAL PROJECT COST: $19,684.

PROJECT OBJECTIVE: To improve the quality and increase the production of greenhouse vegetables.

SUMMARY: Mr. Thériault constructed a greenhouse 100 ft. by 21 ft. for tomatoes with a capacity of about 600 plants. The plants were started from seed in March in peatmoss containers and then transplanted April 15th to the greenhouse. There is one plant every 3.25 feet. The tomato plants are placed in rows and held in an upright position by a system of strings. Styrofoam is placed on the ground at a slant towards the middle of the greenhouse and is used to maintain the 70°F temperature in the structure. The plants are placed in a long plastic bag-like structure that extends the length of the greenhouse. The plastic is stapled together to

(cont'd 1234)

hold the system intact. Water containing plant nutrients is continually being pumped through the system. The water supply has a pH of 8 so nitric acid is added to maintain the pH of 6. The pH is controlled and monitored automatically in the future. The plants are individually electrically pollinated. They grow about 15 feet in height and begin to bear June 20th and will continue to bear until November. The tomatoes are marketed locally in stores from Grand Falls to Edmundston. Mr. Thériault is pleased with his results.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: On-Farm Demonstration of Half-High and Highbush Blueberry Production in New Brunswick

PROJECT AFA NUMBER: T284

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Douglas Carlisle
R. R. # 3
Keswick Ridge, N.B.
Phone: 363-2986

PROJECT COLLABORATOR:
S. Michaud
N.B. Department of Agriculture
Phone: 453-2108

DATE APPROVED: March, 1986

AGREEMENT FUNDING: $ 5,000.

TOTAL PROJECT COST: $10,300.

PROJECT OBJECTIVE: This activity will demonstrate the feasibility of commercially producing half-high and highbush blueberries in selected sites within New Brunswick.

SUMMARY: Douglas Carlisle planted a ¾ acre of three varieties of highbush blueberries: the Blueray, Burlington, and Belmont. These plants were purchased from a greenhouse in southern Ontario, in the spring of 1986.

(cont'd T284)

These varieties were chosen because they had the hardiest root stocks. They were planted in rows with walkways 8 ft. wide and each plant 4 ft. apart. Woodchips surrounded each plant to protect the root systems and to prevent the plant from being overgrown by weeds.

Next year Mr. Carlisle hopes to increase his acreage of blueberry plants to 3 - 4 acres. These plants are being grown so that the fruit can be sold on the commercial market.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Demonstration of Electrostatic Crop Sprayer

PROJECT AFA NUMBER: T285

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: W. B. Coburn Sons Ltd.
R. R. # 3
Mouth of Keswick, N.B.
Phone: 363-3005 or 363-3418

PROJECT COLLABORATOR: C. Everett
N.B. Department of Agriculture
Phone: 453-2691

DATE APPROVED: March, 1986

AGREEMENT FUNDING: $ 6,100.

TOTAL PROJECT COST: $12,200.

PROJECT OBJECTIVE: To demonstrate the use of the electrostatic crop sprayer on 80 acre orchard to determine the viability and practibility of this sprayer under New Brunswick growing conditions.

SUMMARY: The nature of this activity is spraying of agricultural chemicals (pesticides, insecticides, fungicides, nutrients, hormones, etc.) on a commercial apple orchard with a Kinkelder electrostatic crop sprayer. It has a tank which holds 1000 litres.

The spray liquid is negatively charged as it leaves the sprayer nozzles; the apple trees are positively

(cont'd T285)

charged; one attracts the other resulting in a greater and more even coverage. The sprayer can be controlled from the tractor.

Six nozzles break down the spray to a fine mist, this allows for a more even coverage of about a 25 foot range.

The electrostatic sprayer will be used along with a conventional sprayer on a total of about 80 acres of orchard. Mr. Coburn is pleased with the sprayer and finds that spraying time can be reduced with this sprayer.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Refroidissement "Ice Bank Cooling"

PROJECT AFA NUMBER: T292

PROGRAM: Horticulture & Specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Mme Antoine Gaudet et fils
Cap-Pelé, N.B.
Phone: 577-4471

PROJECT COLLABORATOR: L. Folkins / E. Tremblay
N.B. Dept. of Agric. / Ag. Canada
Phone: 433-3073 / 452-3260

DATE APPROVED: April, 1986

AGREEMENT FUNDING: $18,000.

TOTAL PROJECT COST: $24,000.

PROJECT OBJECTIVE: To install a system for cooling vegetables.

SUMMARY: The Grove Refrigeration Ice Bank Cooling System, which came from England, was installed only one week before viewing the project and at this point it was not completed. There was a problem with one motor overheating and also it had not been C.S.A. approved.

The storage area is 22' x 36' x 8' high and the produce will be stacked on pallets. The cooling system will be used to cool and store lettuce, cabbage, turnips, and other vegetables.

The system is run by three 5 H.P. compressors and three fans. The average temperature to be maintained in the storage area is between 30° - 34° F. Except for adjusting the system, they are pleased with the way things are running.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Demonstration and Evaluation of a Potato Planter "Cramer Marathon Hydraulic Hopper"

PROJECT AFA NUMBER: T299

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:

Ronald & Louise Gagnon
R. R. # 5
Grand Falls, N.B.
Phone: 473-5343

(cont'd F299)

PROJECT COLLABORATOR: G. Pelletier
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: April, 1986

AGREEMENT FUNDING: $ 5,820.

TOTAL PROJECT COST: $13,800.

PROJECT OBJECTIVE: Demonstration of a planter for seed potatoes

SUMMARY: Mr. Gagnon just purchased this machine and planted one acre of Gem potatoes (about 10 barrels of seed) as a test-run. He foresees no real difficulty with the machine. It requires minor adjustments so the fertilizer will run out more smoothly. Otherwise, he is pleased with the way it works.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Composting Hog Manure

PROJECT AFA NUMBER: T305

PROGRAM: Livestock Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Jean-Yves Daigle
Centre Universitaire de Shippagan
Shippagan, N.B.
Phone: 336-4215

PROJECT COLLABORATOR: K. McKendy
N.B. Department of Agriculture
Phone: 548-4501

DATE APPROVED: May, 1986

AGREEMENT FUNDING: $17,888.

TOTAL PROJECT COST: $17,888.

PROJECT OBJECTIVE: The object is to try to reduce the odour of lagoons and to test hog manure which has been composting in a pile.

SUMMARY: An experiment was done on two lagoons on Maurice Godin's pig farm. It involved adding peat moss in an attempt to reduce the odour from the lagoons.

In early June, a 15 - 20 cm layer of peat moss was blown into one lagoon by a snowblower making a semi-solid consistency. The sewage has been flushed twice into the lagoon. This method has reduced the odour to a minimal level. More peat moss will be added when the odour problem reoccurs.

(cont'd T305)

The other lagoon is a more liquid one due to a freshwater spring which continually seeps into the lagoon. Peat moss was put into this lagoon and unlike for the other one, was mixed by a pump also reducing the odour but not as effectively as the other method of putting a blanket on top.

Samples from both lagoons have been taken and deposited into two different heaps, with lime being added to each heap. Tests will be done to determine the quality of this fertilizer for fields.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Demonstration of Using Floating Covering for Early Potatoes

PROJECT AFA NUMBER: T318

PROGRAM: Potato Industry Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Ghislain J. Pelletier
N.B.D.A.
Grand Falls, N.B.
Phone: 473-5515

PROJECT COLLABORATOR: G. Pelletier
N.B. Department of Agriculture
Phone: 473-5515

DATE APPROVED: May, 1986

AGREEMENT FUNDING: $ 1,350.

TOTAL PROJECT COST: $ 1,350.

PROJECT OBJECTIVE: To demonstrate growing early potatoes through the greensprouting method and by using a floating covering.

SUMMARY: This project will not be demonstrated until next year. At the present time, a sample of the material was obtained, consisting of 90 feet for one row of Jemseg potatoes for three farms. The material is PA 500 Agri-net.

This material is to be used in combination with the "greensprouting of potatoes" project, to advance the harvest date 7 days or more earlier than before. It warms the soil, causing a faster emergence of the plant, and deleting the effect that the wind causes.

(cont'd T318)

This material will be sufficient to cover 6 rows of potatoes at one time. There will be 4 rows with excellent conditions. The other two outside rows will have some stress due to less protection because they are on the outside. This is more expensive than normal greensprouting due to the cost of the material, but it can be used for two years.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Technologie de pointe pour l'horticulture

PROJECT AFA NUMBER: T331

PROGRAM: Horticulture & specialty Crop Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR: Charles Goguen
N.B. Department of Agriculture
Phone: 523-9796

PROJECT COLLABORATOR: C. LeBlanc
N.B. Department of Agriculture
Phone: 858-2552

AGREEMENT FUNDING: $14,833.

TOTAL PROJECT COST: $14,833.

PROJECT OBJECTIVE: To grow small crops such as lettuce, cucumbers, carrots, celery etc. in the Richibucto area.

SUMMARY: This project is a combination of low-cost demonstration projects for the horticultural industry. An ag. technician-level person is hired to carry on these demonstrations over a three-year period.

The first demonstration involves adding growth regulator to cucumbers to make every flower blossom at one time, therefore producing cucumbers at one time. The intent of this project is to reduce harvest picking time from the original 10 pickings to one to three pickings. The cucumbers will be sprayed twice with the growth regulator, before and after maximum flowering. Calypso and Regal are the two varieties being used for the demonstration. There are a total of 22 rows, each 100 feet in length.

(cont'd T331)

The next demonstration involves the growing of a variety of crops in the St. Charles Peat Bog, in Kent County, to determine if they will grow well in bog areas. These crops include spinach, swiss chard, chinese radish, endives, celeriac, baby carrots and beets, winter onions, radish and garlic.

The next demonstration involves planting 14 varieties of lettuce in St. Charles Peat Bog, to determine which varieties of lettuce grow better. A Timit Chemical was applied to control leaf hoppers. Next year lettuce will be grown on a larger scale, depending on how well it does this year.

The next demonstration involves testing two types of mulch, the Reemay and the Agri-net. Four rows of each material, 25 ft. long, was applied to a field of celery to determine if they would make a difference in the growth of the celery.

The Reemay and Agri-net mulch was applied to four different rows of carrots, 35 ft. in length.

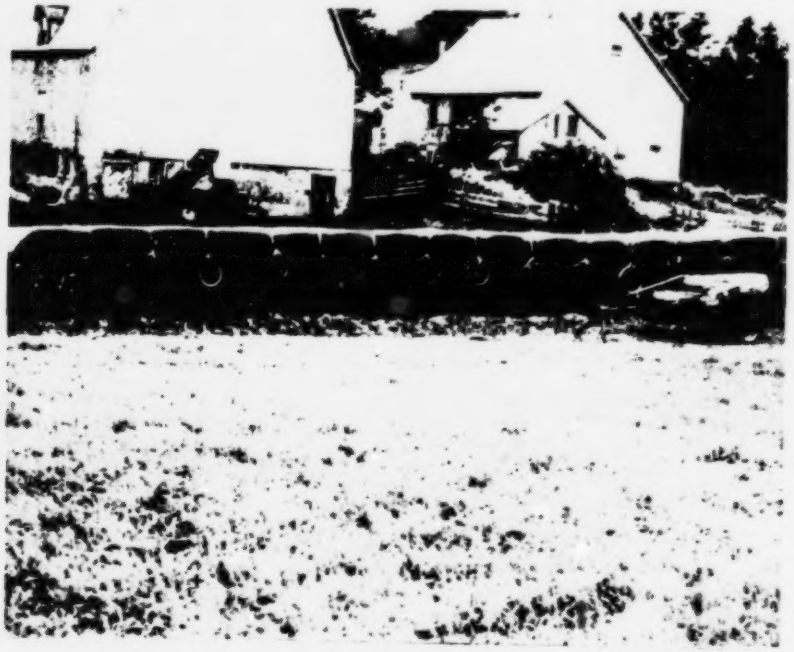
The two mulches were applied on brussel sprouts at the farm of Rhéal Leger to determine its effect.

Another demonstration involves sampling of leaf hoppers on the lettuce crop in Cap-Pelé.

The final demonstration involves applying fertilizer to Romain lettuce. One plot of the lettuce has urea, ammonium nitrate and some calcium applied, the other plot only has ammonium nitrate.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE: Vicon Big Square Bale Haylage



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PROJECT AFA NUMBER: T332

PROGRAM: Livestock Feed Development

SUB-PROGRAM ELEMENT: Technology Demonstration

PROJECT ORIGINATOR:
Jim Wheaton
R. R. # 3
Sackville, N.B.
Phone: 536-0718

PROJECT COLLABORATOR:
C. McLean
N.B. Department of Agriculture
Phone: 433-3073

DATE APPROVED: May, 1986

AGREEMENT FUNDING: $21,000.

TOTAL PROJECT COST: $60,000.

PROJECT OBJECTIVE: To purchase a Vicon 1600 H.P. big square baler and to provide custom silage service to the farmers in Southest New Brunswick.

SUMMARY: The 1600 H.P. Vicon square baler is a fully computerized system made in Holland. This is the first one in Canada. A 130 H.P. tractor is the recommended size to haul the machine but can be operated with a 115 H.P. unit. The baler will make between 40 - 50 bales per hour, each bale being the equivalent of about 16 - 18 small square bales. Each bale is about 2½' x 4' x 5' and is tied with 4 wires.

Mr. Wheaton does a lot of custom work with this machine as well as making silage for himself. It costs the individual farmer $11./bale to have this

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done. The farmer does his own mowing and raking and Mr. Wheaton bales the haylage, picks it up from the field with an attachment on a front end loader, loads it onto a truck and delivers it to the farm, and applies two coats of plastic to the pile for the $11./bale. The bales are put into smaller compartments within the pile because once the haylage is exposed to the air it lasts for only three weeks; therefore, the farmer must decide how much he will use in each 2 - 3 week period. The farmer must supply the tires used for strapping the piles down. Also, he must have a front end loader and a load of mud available for Mr. Wheaton so that he can properly seal the pile all the way around the bottom of the plastic to prevent any air from entering the pile and spoiling the haylage. It costs the farmer more if he wants all the mowing and raking done for him and also, if the place where he wants the haylage stored is more than 1½ miles away from the field where the work is being done.

A 60-70% dry matter test was achieved when the bales were tested. The farmers who had haylage done by this method were pleased with the results. There was very little spoilage and an excellent feed was provided which increased milk production.

Mr. Wheaton has had few problems with this machine and any major parts can be obtained within two days.

Oats, barley, wheat, straw and corn stalks can also be baled with this machine. Mr. Wheaton is extremely pleased with the results.

TECHNOLOGY PROJECT REPORT

PROJECT TITLE:	Gooseberry Production Demonstration
PROJECT AFA NUMBER:	T381
PROGRAM:	Horticulture & Specialty Crop Development
SUB-PROGRAM ELEMENT:	Technology Demonstration
PROJECT ORIGINATOR:	Nick Secord Chaleur Developments, P. O. Box 312 Tide Head, N.B. Phone: 753-6667
PROJECT COLLABORATOR:	Roger Tremblay / Gaetan Chiasson N.B. Department of Agriculture Phone: 453-2108 / 548-4501
DATE APPROVED:	June, 1986
AGREEMENT FUNDING:	$ 4,800.
TOTAL PROJECT COST:	$24,000.
PROJECT OBJECTIVE:	To evaluate and demonstrate the feasibility of commercially producing and marketing gooseberries in New Brunswick.

SUMMARY: Three acres of a red variety of gooseberries were planted in June of 1986. The acreage will be increased to 5 - 10 acres by next year. These gooseberries are a sweeter variety in comparison with the more common varieties grown in the province. This variety of gooseberry was also chosen because the frosts do not appear to harm the blossoms. This is an important factor because of the late frosts in this region.

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The purpose of the activity is to produce enough gooseberries to distribute to the commercial markets to determine if there is a big enough demand for gooseberries and therefore expand the operation.